Rheem Australia Pty Ltd

ABN 21 098 823 511

SERVICE INSTRUCTIONS

Rheem Electric Water Heaters

TM012

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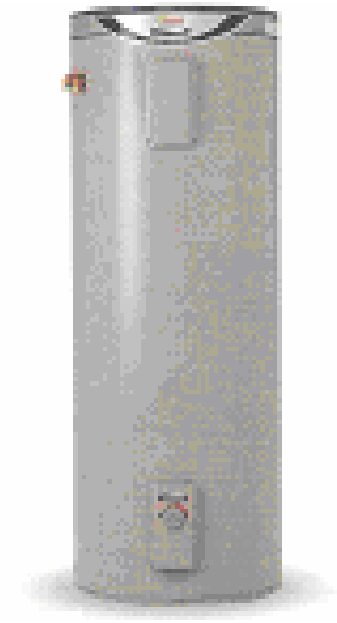

111 Series - Rheemglas
162 Series - Rheemglas
171 Series - Rheemglas
191 Series - Rheemglas
121 Series - Rheem Plus
411 Series - Optima
462 Series - Optima

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Safety Warning

The purpose of this Service Manual is to provide sufficient information to allow a person with the skills as required by the controlling Regulatory Authorities to carry out effective repairs to a Rheem Electric Water Heater in the minimum of time.

Safety precautions or areas where extra care should be observed when conducting tests outlined in this manual are indicated by print in ***bold italics*** and/or a warning symbol. Take care to observe the recommended procedure.

Certain diagnostic procedures outlined in these service instructions require "live" testing to be conducted. Personal Protective Equipment (PPE) should be worn when conducting these tests to prevent the risk of electric shock. (Refer to Rheem Safety Procedure on electrical testing)

Plug in models: If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.

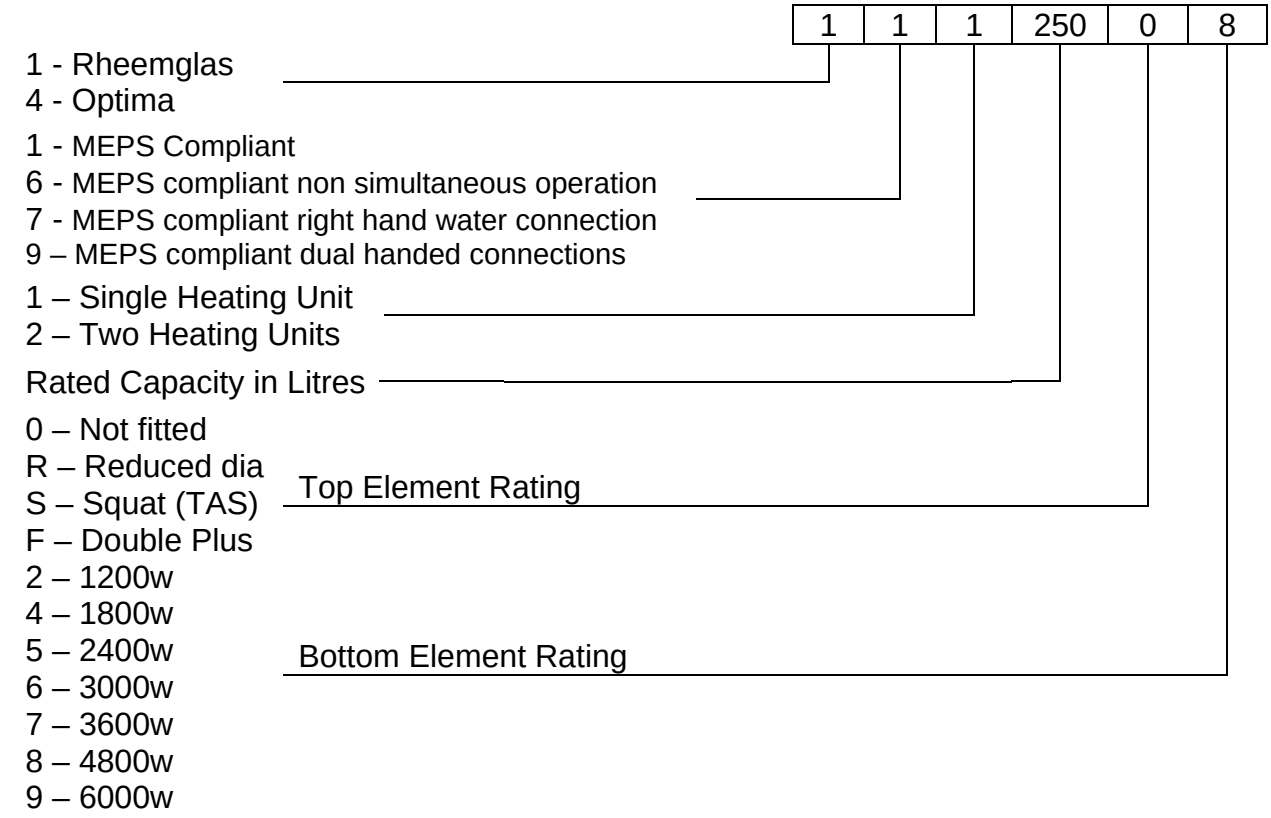
Introduction

The information provided in these instructions is based on the water heater being installed in accordance with the Installation Instructions provided with each water heater.

Should you require further technical advice on a Rheem Electric Water Heater, contact your nearest Rheem Water Heater Australia Service Department where all genuine replacement parts are also available.

Heater Model Identification

All identification numbers are designed to convey detailed information about the water heater to which it is attached. The model number consists of 8 digits.


1 1 1 250 0 8
1 - Rheemglas
4 - Optima
1 - MEPS Compliant
6 - MEPS compliant non simultaneous operation
7 - MEPS compliant right hand water connection
9 – MEPS compliant dual handed connections
1 – Single Heating Unit
2 – Two Heating Units
Rated Capacity in Litres
0 – Not fitted
R – Reduced dia
S – Squat (TAS)
F – Double Plus
Top Element Rating
2 – 1200w
4 – 1800w
5 – 2400w
6 – 3000w
7 – 3600w
8 – 4800w
9 – 6000w
Bottom Element Rating

Note: Model number, serial number and date of manufacture should be quoted in all correspondence.

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Specifications

	Model		Rated Capacity (Litres)	T & PR Valve Rating (kPa)	Maximum Inlet Pressure (kPa)		Bottom T/stat setting (°C)	Water Connections		Bottom T/stat Type	Anode Length (mm)
	Series	Capacity			With ECV	Without ECV		Inlet Outlet	T&PR		
RHEEMGLAS	111 121 171 191 162	025	25	1400	960	1120	70	RP¾/20	RP½/15	Tradesperson Adjustable	230
		053	50	1400	960	1120	75	RP¾/20	RP½/15		490 / 540*
		090	80	1400	960	1120	70	RP¾/20	RP½/15		695
		135	125	1400	960	1120	70	RP¾/20	RP½/15		1153
		170	160	1400	960	1120	70	RP¾/20	RP½/15		1400
		270	250	1000	680	800	70	RP¾/20	RP½/15		1153
		340	315	1000	680	800	70	RP¾/20	RP½/15		1400
		425	400	1000	680	800	70	RP¾/20	RP½/15		1636
OPTIMA	411 462	270	250	1000	680	800	60	RP¾/20	RP½/15	Consumer Adjustable	1153
		340	315	1000	680	800	60	RP¾/20	RP½/15		1400
		425	400	1000	680	800	60	RP¾/20	RP½/15		1636

Notes:
121 series available in 125, 160, 250 and 315 litre capacities only
171 series available in 50, 80 and 125 litre capacities only
191 series available in 50 litre capacity only
Top thermostat on twin element models set at 60ºC
* 540mm anode fitted to 111050F and 171050F models only

Preventative Maintenance

It is suggested for peak performance that the water heater be serviced annually.

1. Check for discharge from the T&PR valve. When the element is operating a small discharge of water may be evident. Operate the valve-easing lever to ensure the valve opens and resets properly. Always open and close the valve gently. The T&PR valve should be replaced at 5 yearly intervals.
2. Check for leaks at all tank fittings.
3. Check for signs of excessive corrosion on the water heater jacket.
4. ***Isolate power*** to the water heater and check all electrical connections for signs of overheating due to poor connection.
5. Conduct an insulation test on the water heater. (Refer to page 25)
6. Rheem Plus models: Service the tempering valve. (Refer to page 32)

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Single Element Models

Water temperature is maintained via a thermostat switching the active conductor to an electric immersion element positioned towards the bottom of the cylinder.

When the water temperature within the cylinder falls sufficiently the thermostat contacts close suppling power to the element.

Once the water temperature reaches the set point of the thermostat, the contacts open cutting power to the element.

A double pole “manual reset” over temperature cut out is incorporated into the thermostat to provide additional protection in the event the controlling thermostat contacts fail. The ECO contacts open between 80ºC and 88ºC.

Twin Element Non-Simultaneous Models

Water temperature is maintained via two (2) electric immersion elements, one (1) positioned near the top of the cylinder and the other towards the bottom. Only one element is operational at any time (known as non-simultaneous operation).

A thermostat, positioned adjacent to each element is utilized to maintain water temperature.

The top thermostat switches the neutral from the top element to the bottom element, this ensures only one element can be energised at a time. The top thermostat is factory set at 60ºC. The bottom thermostat switches the active to the bottom element only.

Both thermostats incorporate a double pole “manual reset” ECO to provide additional protection in the event the controlling thermostat contacts fail.

Once the top thermostat senses a temperature of approximately 60ºC the thermostat contacts open the neutral circuit to the top element (between terminals 1L and 2T), causing the top element to be de-energised, and close the neutral circuit to the bottom element (between terminals 1L and 4T).

When the water temperature at the bottom of the tank reaches the set point of the bottom thermostat, the thermostat contacts open cutting the active circuit to the bottom element.

Under normal usage the top element is unlikely to operate, the water temperature being maintained by the bottom element. During periods of heavy use when the complete supply of hot water is depleted the top element will operate to maintain the water temperature at the top of the tank.

When the bottom element is connected to an off peak tariff full recovery of the tank will occur whenever power from the off peak tariff is available, usually overnight.

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Temperature and Pressure Relief Valve

A valve designed to provide automatic relief by discharging water in case of excessive temperature, pressure or both.

Never fit a T&PR Valve with a pressure rating greater than that indicated on the product-rating label.

Pressure Limiting Valve (P.L.V.)

A valve that controls its outlet pressure to a predetermined limit.

Outlet Delivery Tube (Dip Tube)

A plastic tube installed in the hot water outlet of the water heater cylinder to conduct water from the highest point to the outlet connection. It also acts as a fitting liner.

Inlet Delivery Tube (Dip Tube)

A plastic tube installed in the cold water inlet of the water heater cylinder to assist with stratification. It also acts as a fitting liner.

Diffuser

A plastic device installed in the cold water inlet of the water heater cylinder to assist with stratification. It also acts as a fitting liner.

Fitting Liner

A plastic tube installed in the cold-water inlet of the water heater to provide protection against corrosion through the life of the water heater.

Anode (Sacrificial)

A metal alloy electrode installed in the water heater cylinder that by galvanic action protects the cylinder from corrosion.

Over Temperature Energy Cut Out (E.C.O.)

A temperature-sensing device in combination with the thermostat that automatically cuts off the supply of electrical energy to prevent excessive water temperature occurring. This device will not reset automatically but may be manually reset once temperatures have fallen to a safe level.

Thermostat

A device, responsive to temperature, which controls the supply of electrical energy to the element to maintain the stored water at the required temperature.

Heating Unit (Element)

A tubular device containing an electric resistance element that converts electrical energy to heat. Standard ratings are 1.2, 1.8, 2.4, 3.6, 4.8 and 6.0Kw

Non-simultaneous (Top) Thermostat – Twin Element Models

A device responsive to temperature which controls the supply of electrical energy to the top element to maintain the stored water at the required temperature. It also switches the neutral supply between the top and bottom elements to ensure only one element can be operational at any time. This is known as non-simultaneous operation.

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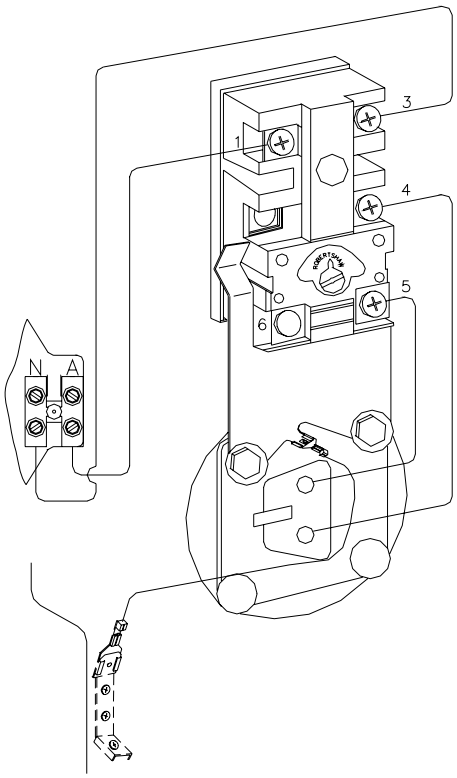
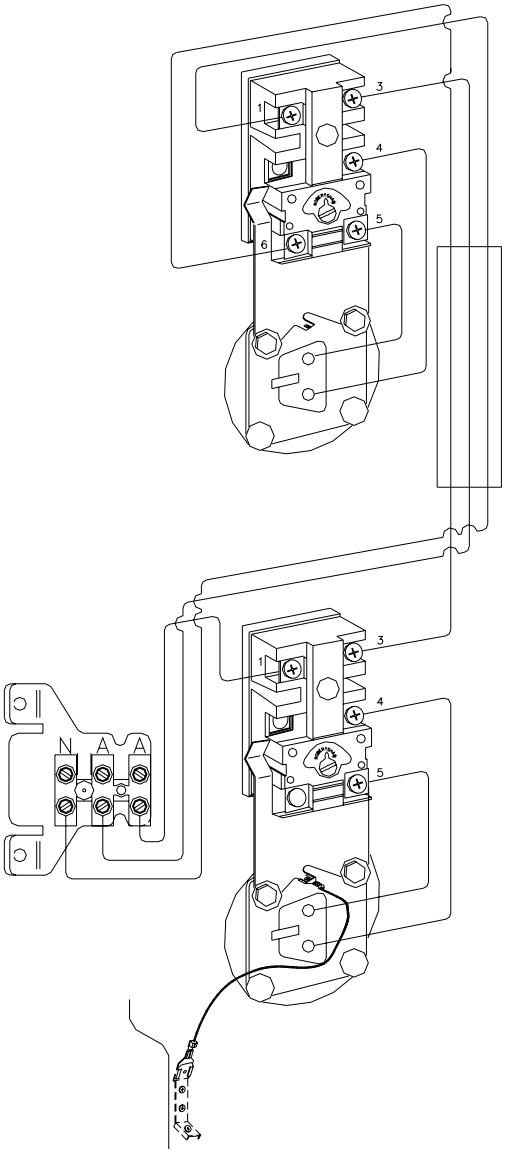
Wiring Diagrams

Single Element Models



Twin Element Models



Product Changes

Diameter and Height Changes

In April 2003 the jacket diameter on all 80 -160L models was reduced from 492mm to 478mm.

In January 2004 the overall height of single and twin element 400L models (excluding solar) was reduced by 40mm. As part of this change the inlet fitting was raised 40mm to maximise delivery and the height of the booster element was dropped 40mm to retain the same boost volume.

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In May 2004 the 111050 (LH connections) and 171050 (RH connections) models were replaced with the 191050 dual handed model. The dimensions remained unchanged.

In October 2005 the 191050 was superseded by the 191G50 to meet new MEPS requirements. As part of this change the diameter increased from 393mm to 437mm and the height increased from 670mm to 673mm

In March 2006 the 191G50 (dual handed) models were superseded by the 111050F (LH connections) and 171050F (RH connections). The F series 50 litres have a double plus cylinder allowing for a reduction in diameter from 437mm to 393mm making the unit more suitable for in cupboard installation. The overall height however increases from 673mm to 690mm.

Element Changes

In November 2005 a new design electric element and cylinder element barrel was introduced to all Rheem electric storage water heaters (refer to fig. 1A & 1B).

The new design elements utilise a new flange, gasket and earthing arrangement and are a direct replacement for earlier model elements and as such part numbers remain unchanged.

The new type gaskets (refer to fig.2) will also fit earlier model elements and are now supplied with the element. These new gaskets have a radius on the top internal edge allowing a better seal against the element, are shorter overall by 2mm, and have a flange thickness of 2.15mm instead of 2.25mm.

The new design cylinder element barrels do not have an earthing tab and require the earth bond to be connected to the earthing tab on the thermostat clamp (refer to fig. 4).

When installing an early or new type element on a cylinder barrel that has an earth tab, this earth tab must be used (refer to fig.3).

When installing an early or new type element on a new type cylinder barrel that does not have an earth tab, the earth tab on the thermostat clamp must be used (refer to 4).

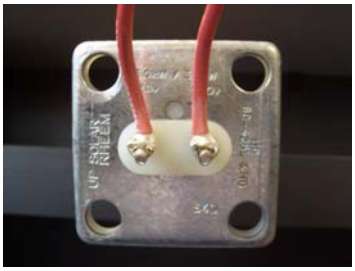

Fig.1A New design element front view

Fig.1B New design element side view

Fig.2 New design element gasket

Fig.3. Cylinder barrel Earth tab

Fig.4. Thermostat clamp Earth tab

Refer also to Technical Bulletins TB05 019 and TB05 020

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Common Faults

When a complaint is lodged about the performance of a hot water system there are a number of causes that should be checked and eliminated. In an attempt to pinpoint the most likely cause it is important to discuss with the customer their reasons for the complaint, the duration of the problem, any change in circumstances or usage and recent weather conditions. This information in conjunction with the following listed common complaints will assist you in locating the most likely cause. All procedures assume there is water flowing through the water heater.

Excessive hot water usage

The complaints of insufficient hot water and no hot water can on many occasions be attributed to hot water usage exceeding the capacity of the water heater to provide hot water.

When first attending a call of this nature it is essential to establish the probable hot water usage by querying the usage habits of the household and comparing this with the potential delivery of the model water heater installed. It can then be established if the usage is within or outside the capacity of the model. The areas to look at for excessive usage are:

1. Automatic washing machines.
2. Showers exceeding 12 litres/minute for mixed water and 5 minutes in duration.
3. Two or more showers operating at the same time.
4. Change of occupancy or number of persons increased.
5. High water pressure area. (Excessive pressure relief valve discharge).
6. Plumbing leaks.
7. Thermostat temperature setting.
8. Crossed connection.

Mixing or crossed connections

If an automatic dishwasher, washing machine, flick mixer tap, tempering valve or thermostatic mixing valve is installed there is always the possibility that the cold water could mix with the hot water through a faulty or incorrectly installed valve. This is referred to as a cross connection. The complaints of insufficient hot water, water too cold or excessive discharge from the pressure relief valve may be attributed to a cross connection. The method of checking for a cross connection is:

1. Turn off the stopcock on the cold water supply to the water heater.
2. Open a hot tap. If water flow is persistent and cold a cross connection exists.

Water hammer

A water heater will not cause water hammer, however valves associated with the water heater may be the source of the problem i.e. cold-water stopcock, non-return valve or relief valve.

Most water hammer problems are associated with plumbing, hot and cold or appliances i.e. solenoid valves, ballcocks, loose pipes, sharp angles in pipe work, faulty or worn valve parts, loose tap washers or neighbouring equipment.

High water pressure areas will have more complaints of this nature and the use of a pressure-limiting valve (PLV) to reduce the household cold-water pressure will usually solve most problems.

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Hot water plumbing leaks

If hot water has not been used for a period of time, feeling the temperature of the hot water line may give an indication of water flow if the pipe is warm. The method of checking for plumbing leaks is:

1. Turn off the stopcock on the cold water supply to the water heater.
2. Open a hot tap to ensure the flow of water stops. This will confirm the stopcock is operating correctly.
3. Turn off the hot tap.
4. Turn on the stopcock to make up the water pressure in the water heater, and then turn the stopcock off again.
5. Wait approximately 5 minutes then do either of the following:
   a. With your ear close to the stopcock turn it on slightly and listen for any water passing. If there are no leaks, water should not pass.
   b. Open a hot tap while listening for any pressure release. If there is a pressure release there will be no leaks in the plumbing system.

Discoloured water

This may be the result of discoloured water entering from the cold water mains. Check if the cold water is also discoloured.

Fault Finding Chart Index

Fault		Chart number	Page
No hot water	Single Element Models	1, 1.1	12, 13
	Twin Element Models	2, 2.1, 2.2	16,17,19
Insufficient hot water		3	20
Water not hot enough		3.1, 3.2	21,21
Leaking water heater		4	22
Noisy water heater		5	23
Water too hot		6	24
Electrical insulation test		7	25

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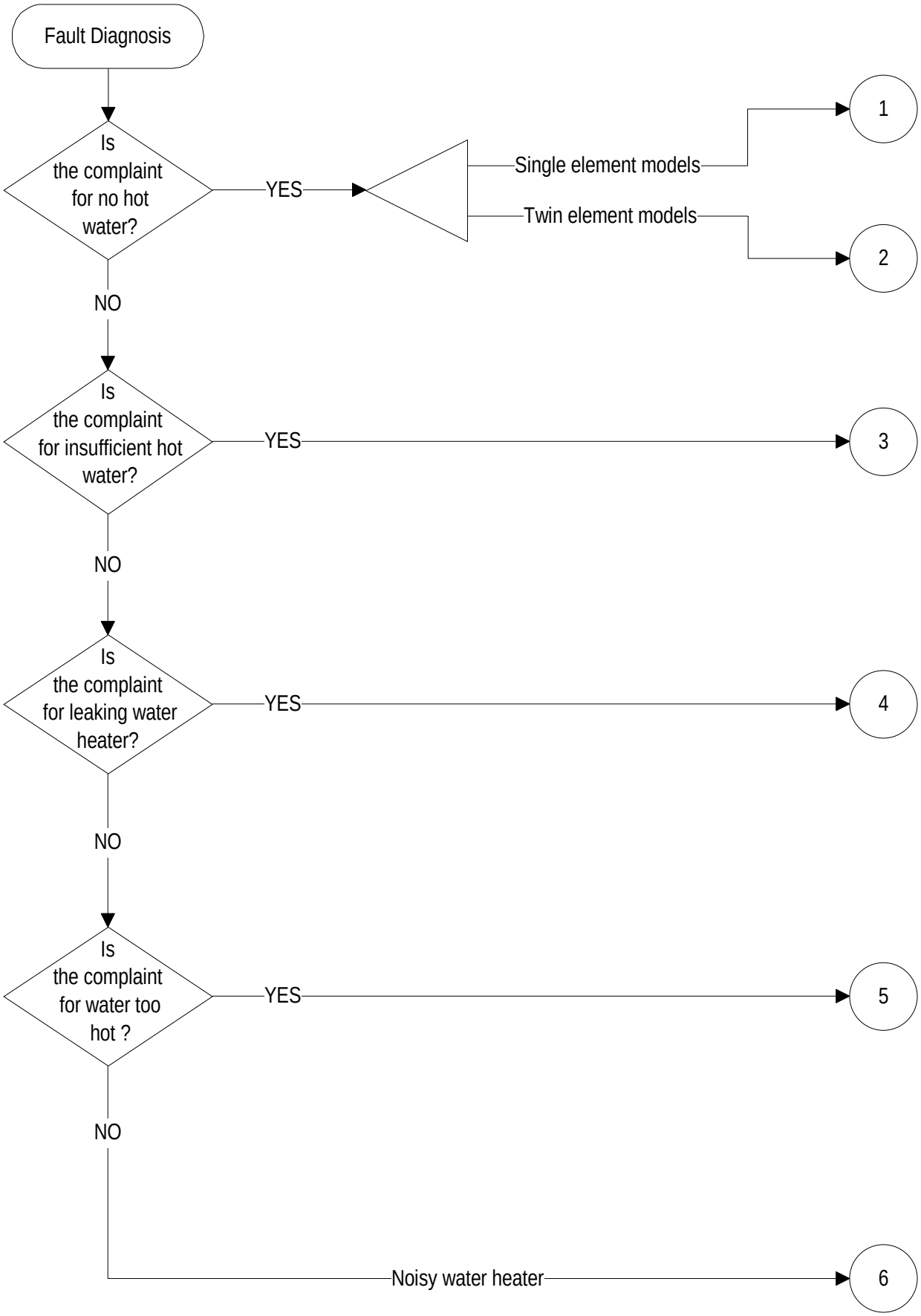
General Fault Finding Chart



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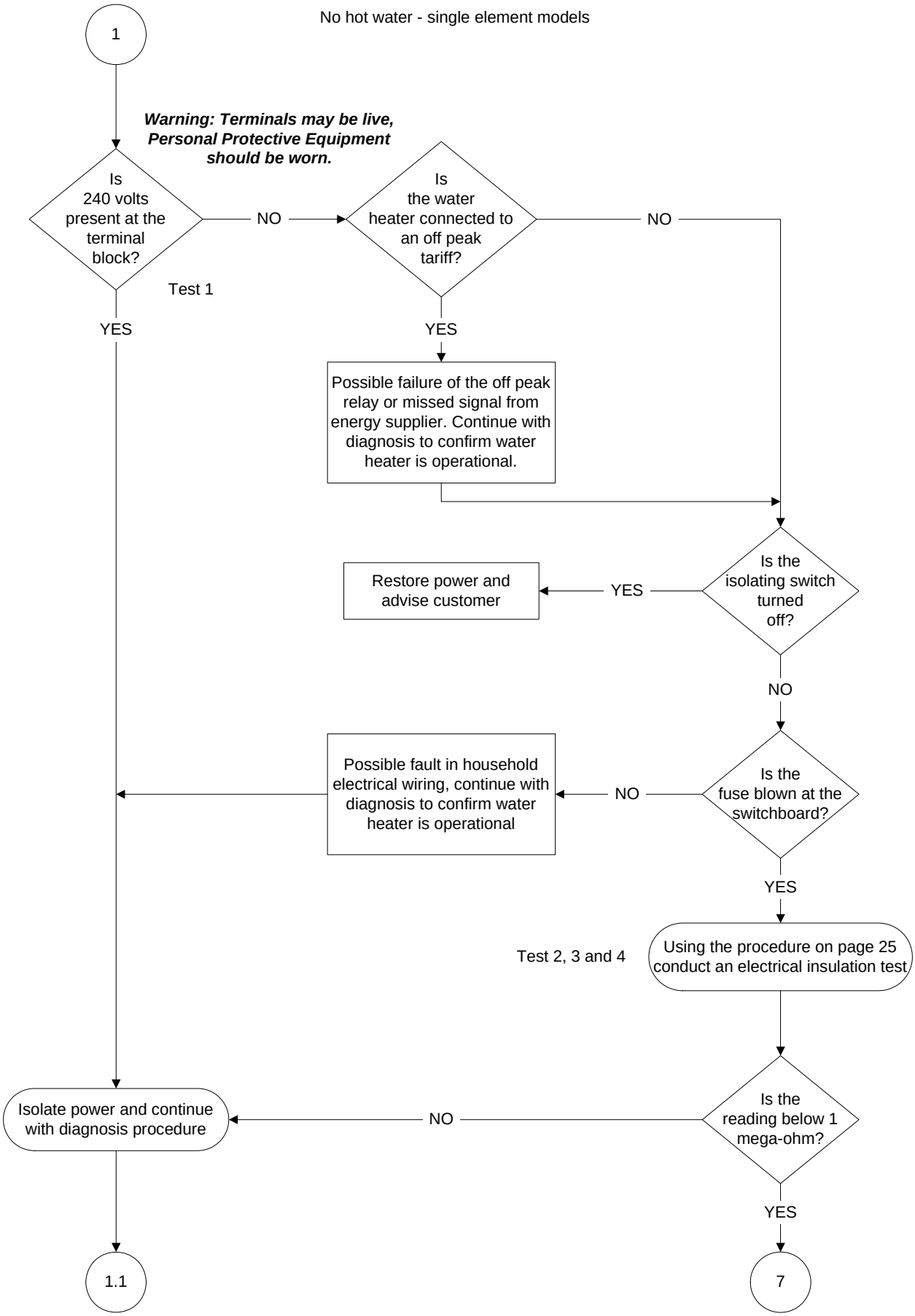
Fault Finding Chart 1


1
No hot water - single element models
Warning: Terminals may be live, Personal Protective Equipment should be worn.
Is 240 volts present at the terminal block?
NO
Is the water heater connected to an off peak tariff?
NO
Test 1
YES
YES
Possible failure of the off peak relay or missed signal from energy supplier. Continue with diagnosis to confirm water heater is operational.
Is the isolating switch turned off?
YES
Restore power and advise customer
NO
Is the fuse blown at the switchboard?
NO
Possible fault in household electrical wiring, continue with diagnosis to confirm water heater is operational
YES
Test 2, 3 and 4
Using the procedure on page 25 conduct an electrical insulation test
Is the reading below 1 mega-ohm?
NO
Isolate power and continue with diagnosis procedure
YES
1.1
7

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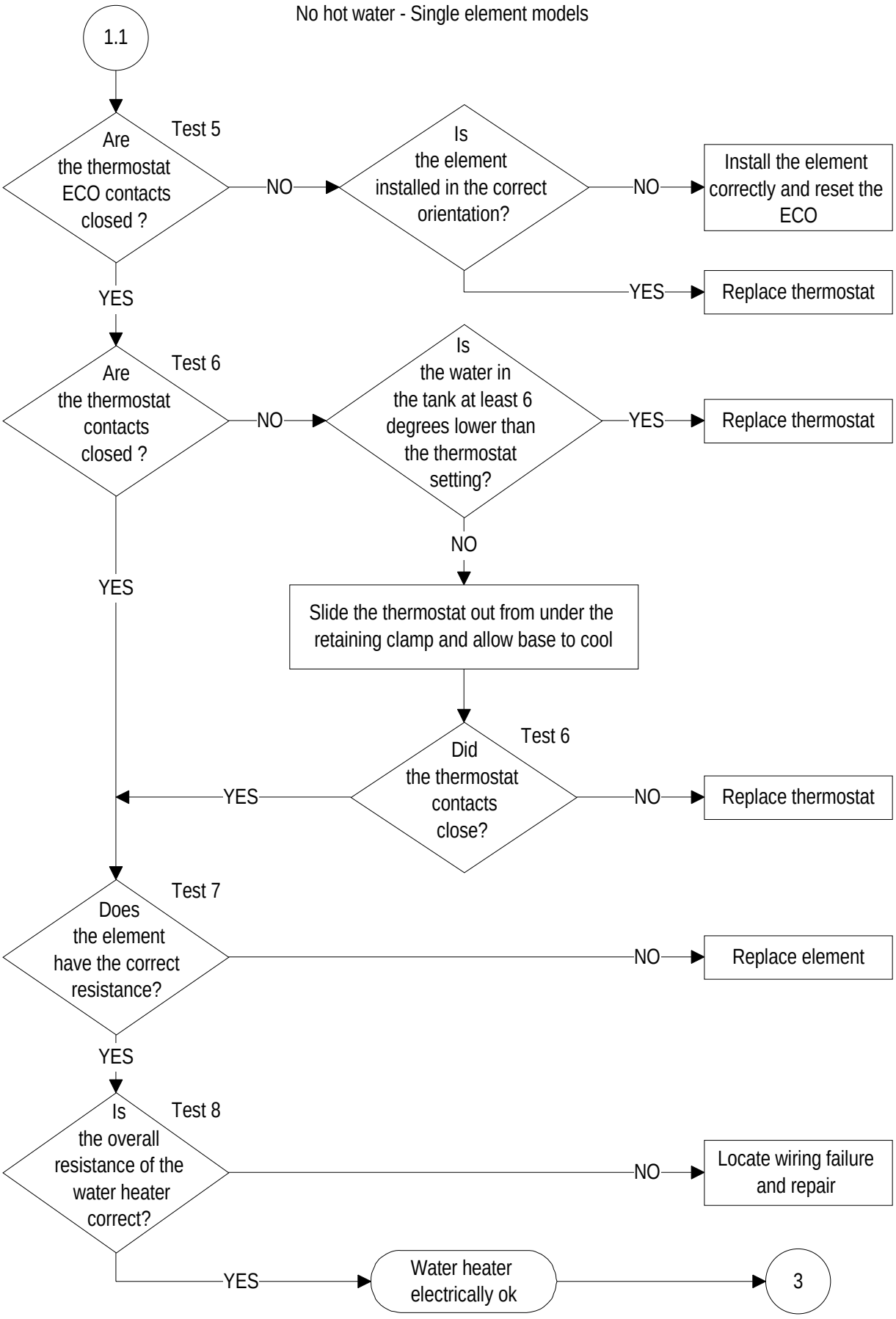
Fault Finding Chart 1.1



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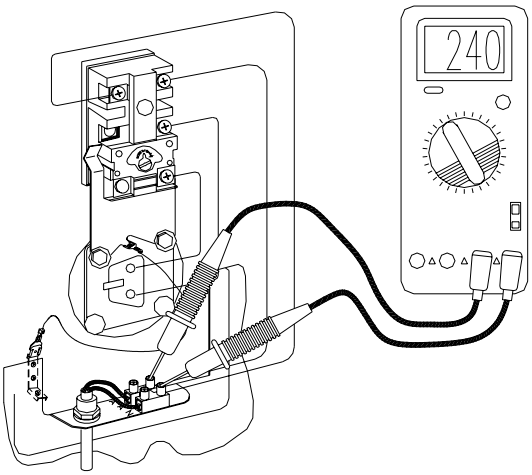
Component Tests 1, 5, & 6

Test 1

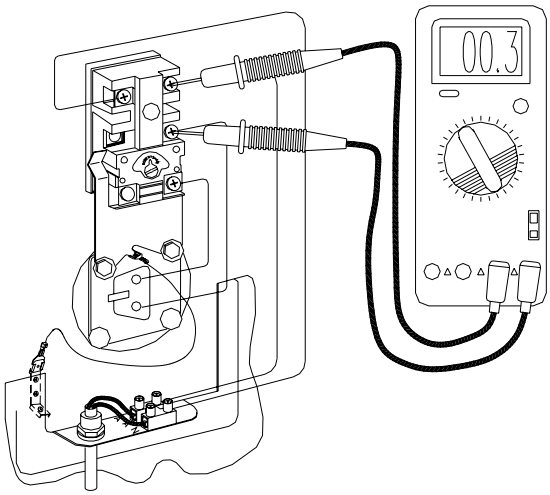


Live equipment Personal Protective Equipment should be worn when conducting this test.

Using a multimeter on the AC voltage scale, measure between active and neutral on the terminal block.

Normal voltage is 240 volts

Test 5

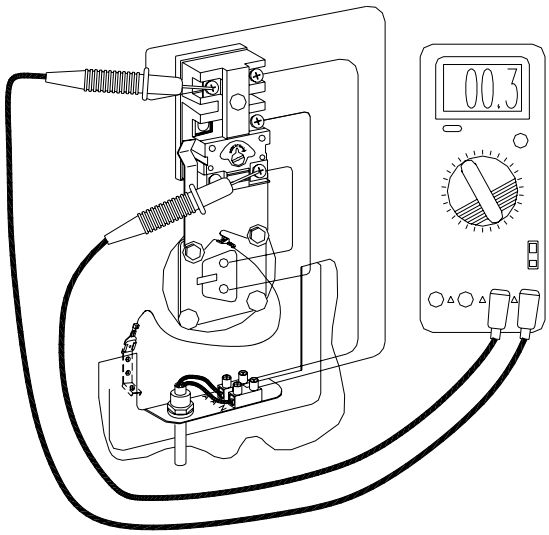


Ensure power is isolated before conducting test

Using a multimeter on the x1 resistance scale, measure between terminals 3L and 4L on the thermostat.

The reading should be less than 1 ohm.

Test 6



Ensure power is isolated before conducting test

Using a multimeter on the x1 resistance scale, measure between terminals 1L and 2T on the thermostat.

The reading should be less than 1 ohm.

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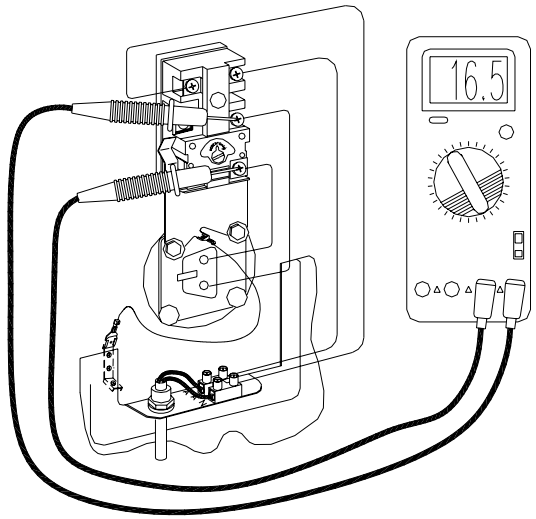
Test 7



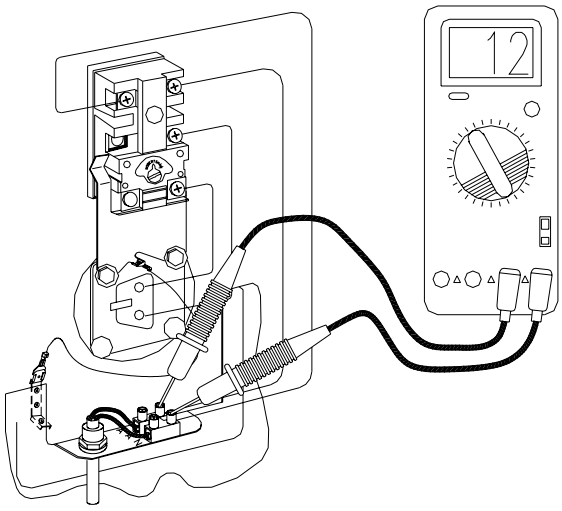
Ensure power is isolated before conducting test

Using a multimeter on the x1 resistance scale, measure between terminals 2T and 4L of the thermostat.

Normal resistance for the heating unit is:

1.2kW: 43-53 ohms 1.5kW: 35-42 ohms
1.8kW: 29-35 ohms 2.4kW: 22-26 ohms
3.0kW: 17-21 ohms 3.6kW: 15-17 ohms
4.8kW: 11-13 ohms 6.0kW: 9-11 ohms

Test 8



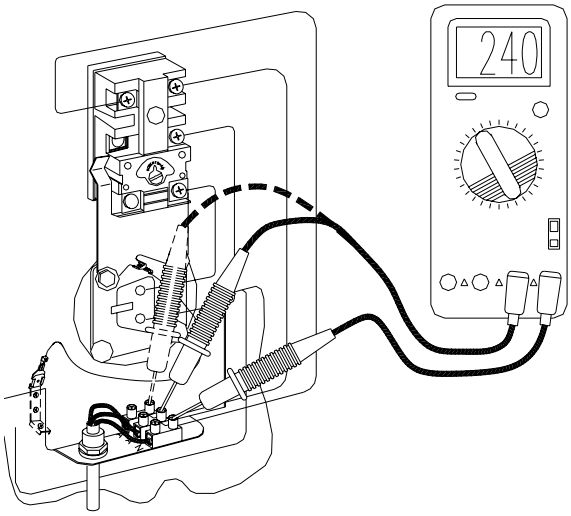
Ensure power is isolated before conducting test

Using a multimeter on the x1 resistance scale, measure between active and neutral on the terminal block.

Normal resistance when the thermostat contacts are closed is:

1.2kW: 43-53 ohms 1.5kW: 35-42 ohms
1.8kW: 29-35 ohms 2.4kW: 22-26 ohms
3.0kW: 17-21 ohms 3.6kW: 15-17 ohms
4.8kW: 11-13 ohms 6.0kW: 9-11 ohms

Test 9



Live equipment Personal Protective Equipment should be worn when conducting this test.

Using a multimeter on the AC voltage scale, measure between each active and the neutral on the terminal block.

Normal voltage is 240 volts

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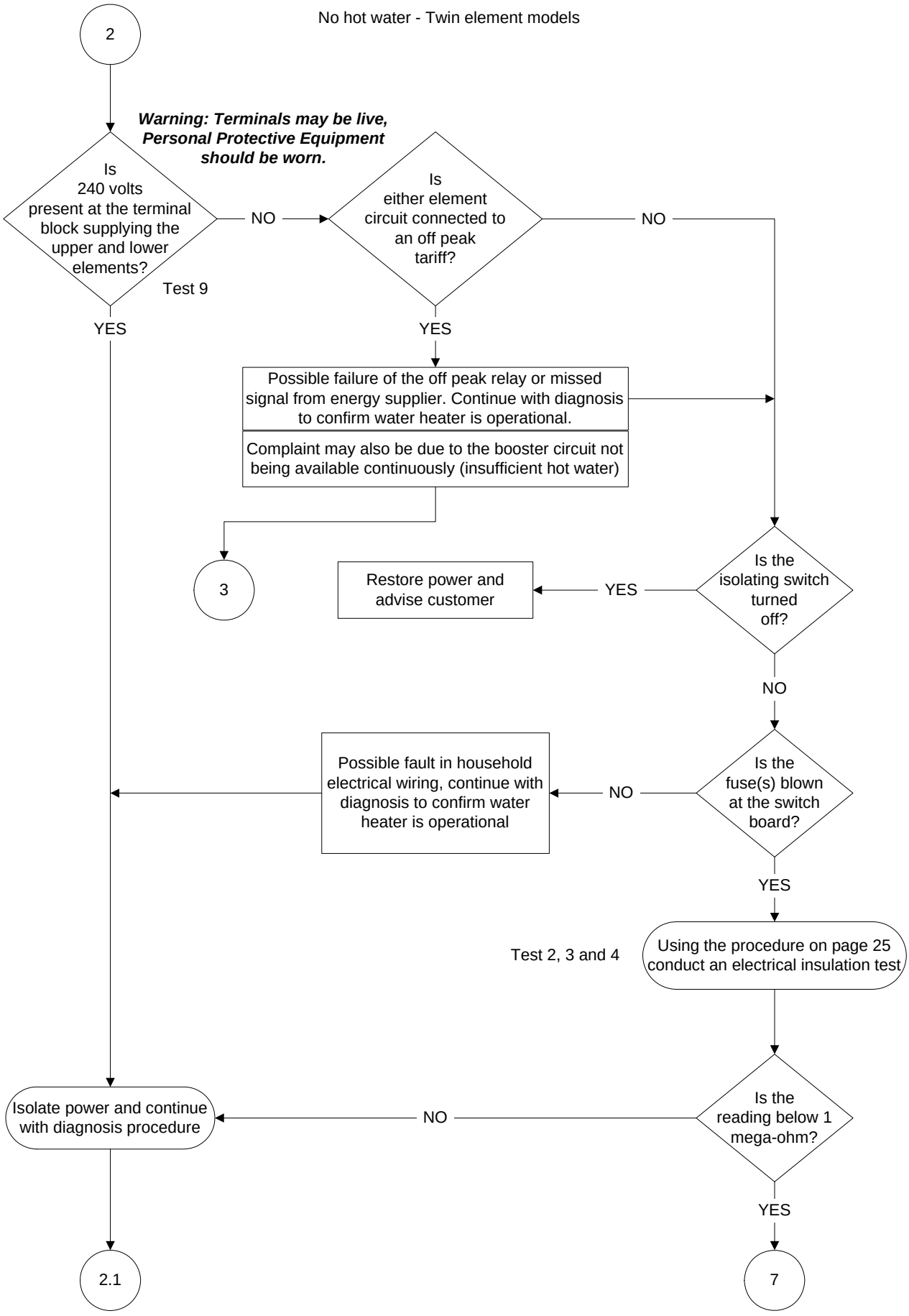
Fault Finding Chart 2


No hot water - Twin element models
2
Warning: Terminals may be live, Personal Protective Equipment should be worn.
Is 240 volts present at the terminal block supplying the upper and lower elements?
NO
Is either element circuit connected to an off peak tariff?
NO
Test 9
YES
YES
Possible failure of the off peak relay or missed signal from energy supplier. Continue with diagnosis to confirm water heater is operational.
Complaint may also be due to the booster circuit not being available continuously (insufficient hot water)
3
Restore power and advise customer
YES
Is the isolating switch turned off?
NO
Possible fault in household electrical wiring, continue with diagnosis to confirm water heater is operational
NO
Is the fuse(s) blown at the switch board?
YES
Test 2, 3 and 4
Using the procedure on page 25 conduct an electrical insulation test
Isolate power and continue with diagnosis procedure
NO
Is the reading below 1 mega-ohm?
YES
2.1
7

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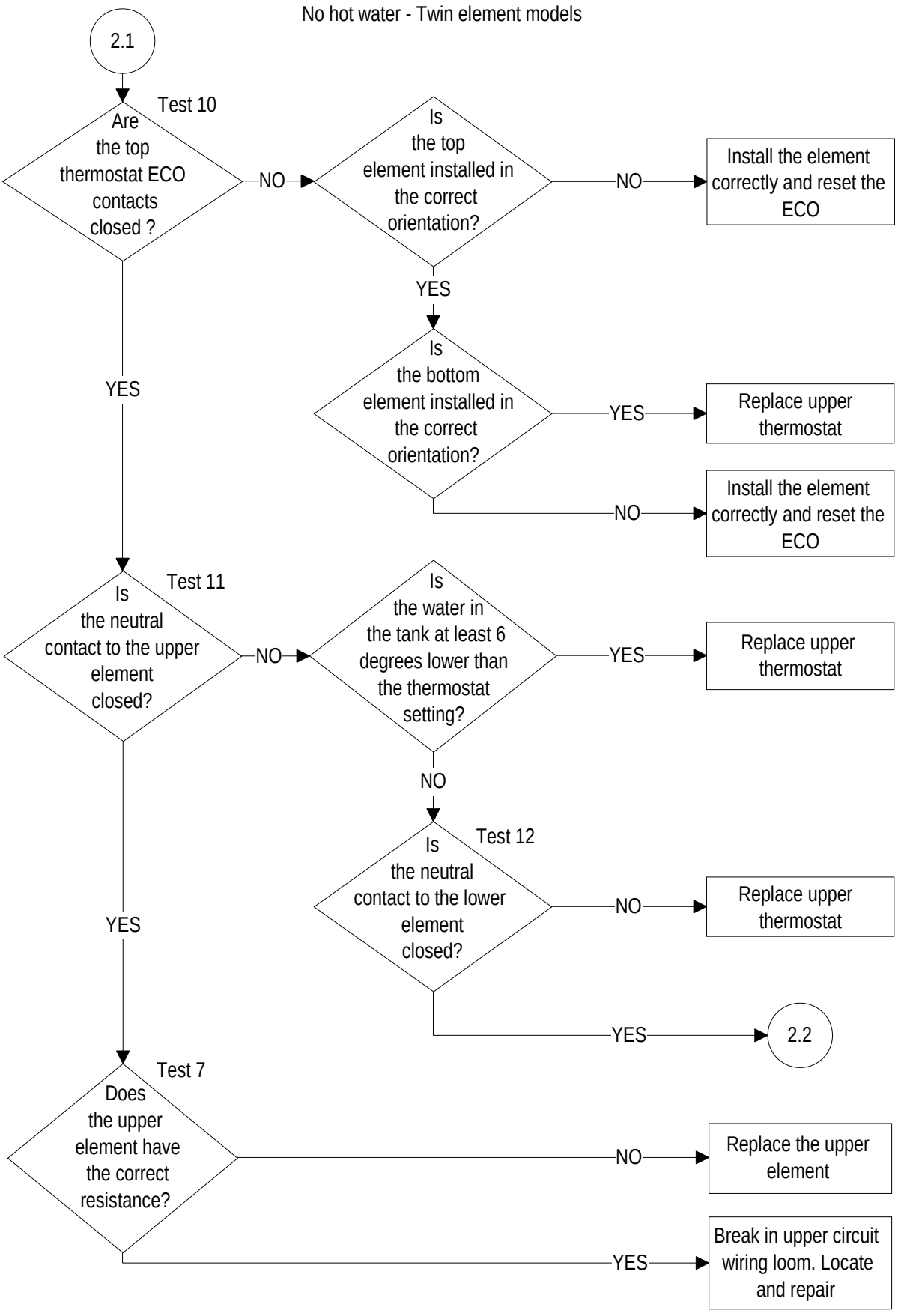
Fault Finding Chart 2.1



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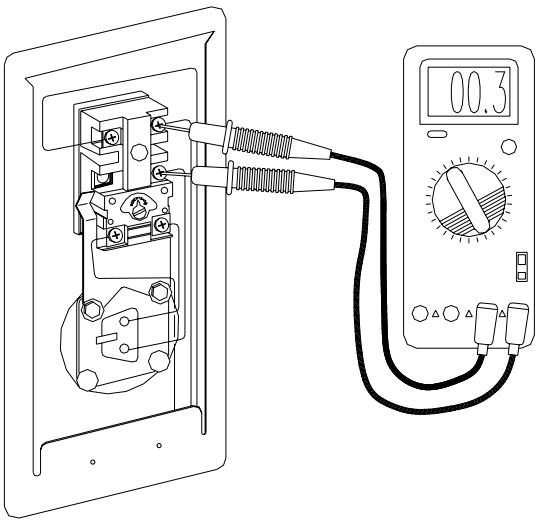
Test 10

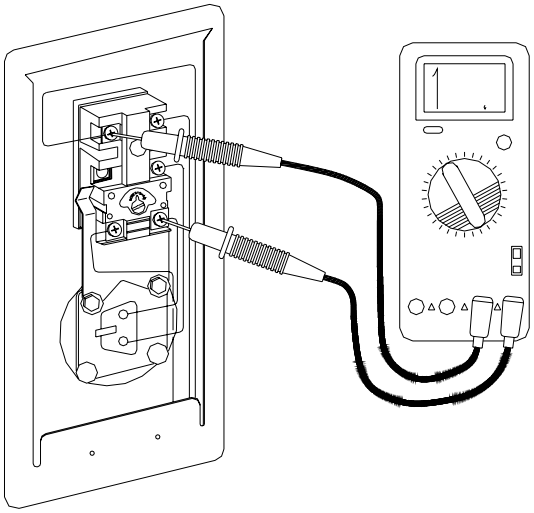


Ensure power is isolated before conducting test

Using a multimeter on the x1 resistance scale, measure between terminals 3L and 4L of the upper thermostat.

The reading should be less than 1 ohm.

Test 11

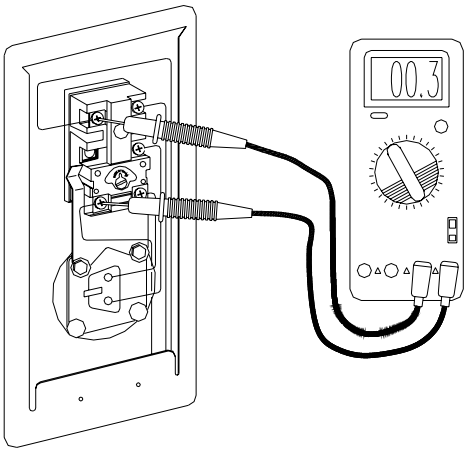


Ensure power is isolated before conducting test

Using a multimeter on the x1 resistance scale, measure between terminals 1L and 2T of the upper thermostat.

If the reading is less than 1 ohm the neutral to the top element is closed.

Test 12



Ensure power is isolated before conducting test

Using a multimeter on the x1 resistance scale, measure between terminals 1L and 4T of the upper thermostat.

If the reading is less than 1 ohm the neutral to the bottom element is closed.

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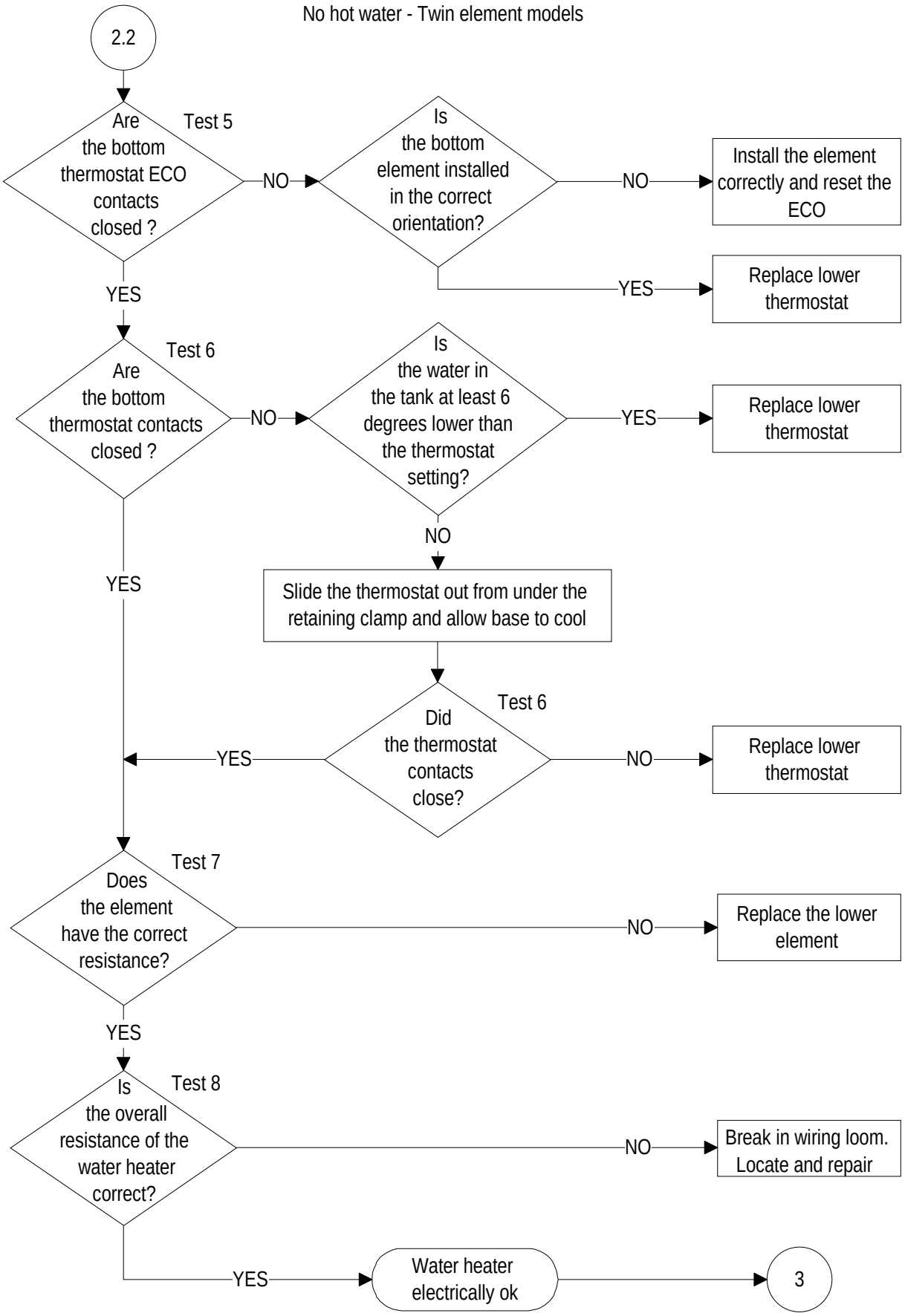
Fault Finding Chart 2.2



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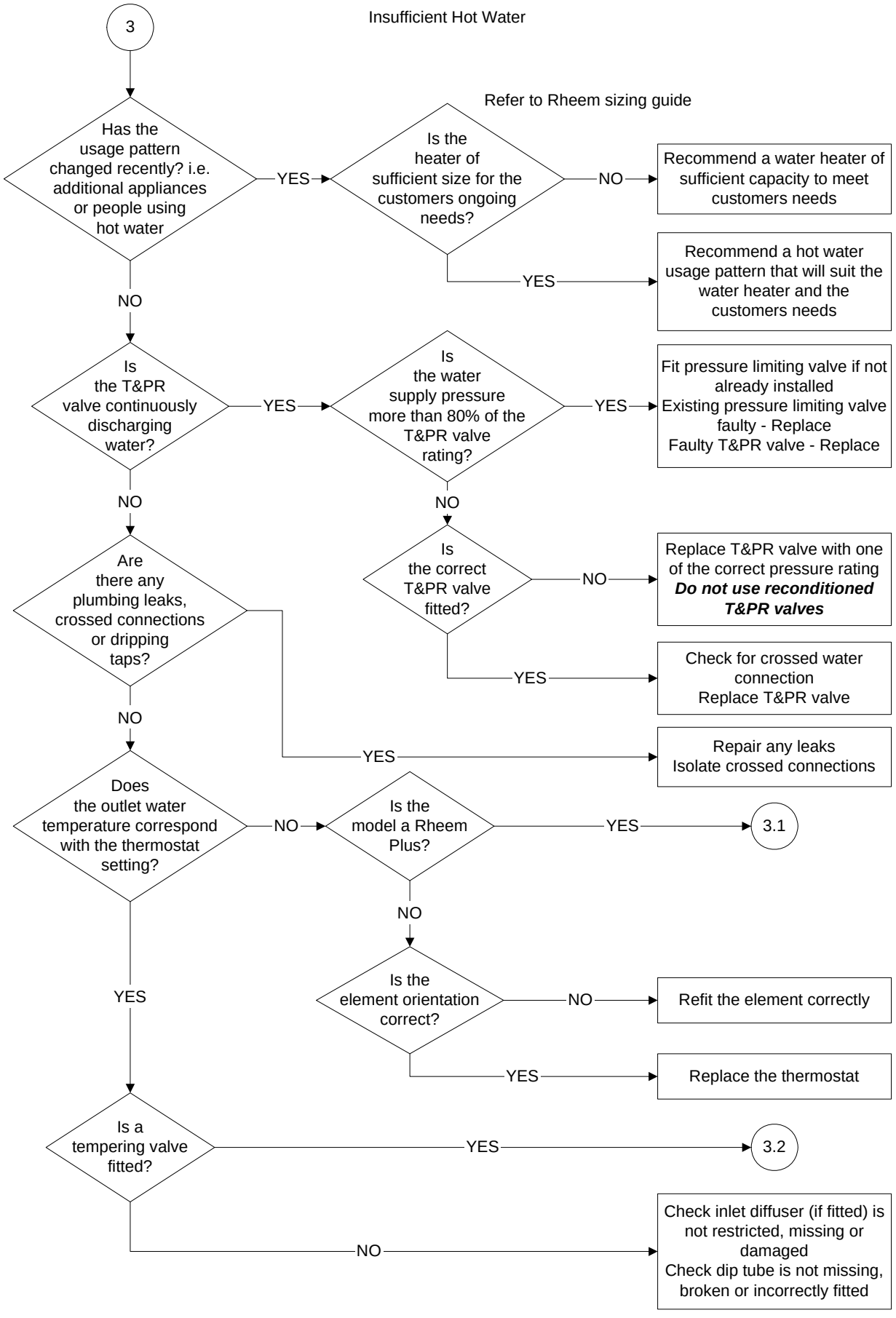
Fault Finding Chart 3


3
Insufficient Hot Water
Refer to Rheem sizing guide
Has the usage pattern changed recently? i.e. additional appliances or people using hot water
YES
Is the heater of sufficient size for the customers ongoing needs?
NO
Recommend a water heater of sufficient capacity to meet customers needs
YES
Recommend a hot water usage pattern that will suit the water heater and the customers needs
NO
Is the T&PR valve continuously discharging water?
YES
Is the water supply pressure more than 80% of the T&PR valve rating?
YES
Fit pressure limiting valve if not already installed
Existing pressure limiting valve faulty - Replace
Faulty T&PR valve - Replace
NO
NO
Are there any plumbing leaks, crossed connections or dripping taps?
Is the correct T&PR valve fitted?
NO
Replace T&PR valve with one of the correct pressure rating
Do not use reconditioned T&PR valves
YES
Check for crossed water connection
Replace T&PR valve
NO
YES
Repair any leaks
Isolate crossed connections
Does the outlet water temperature correspond with the thermostat setting?
NO
Is the model a Rheem Plus?
YES
3.1
NO
YES
Is the element orientation correct?
NO
Refit the element correctly
YES
Replace the thermostat
Is a tempering valve fitted?
YES
3.2
NO
Check inlet diffuser (if fitted) is not restricted, missing or damaged
Check dip tube is not missing, broken or incorrectly fitted

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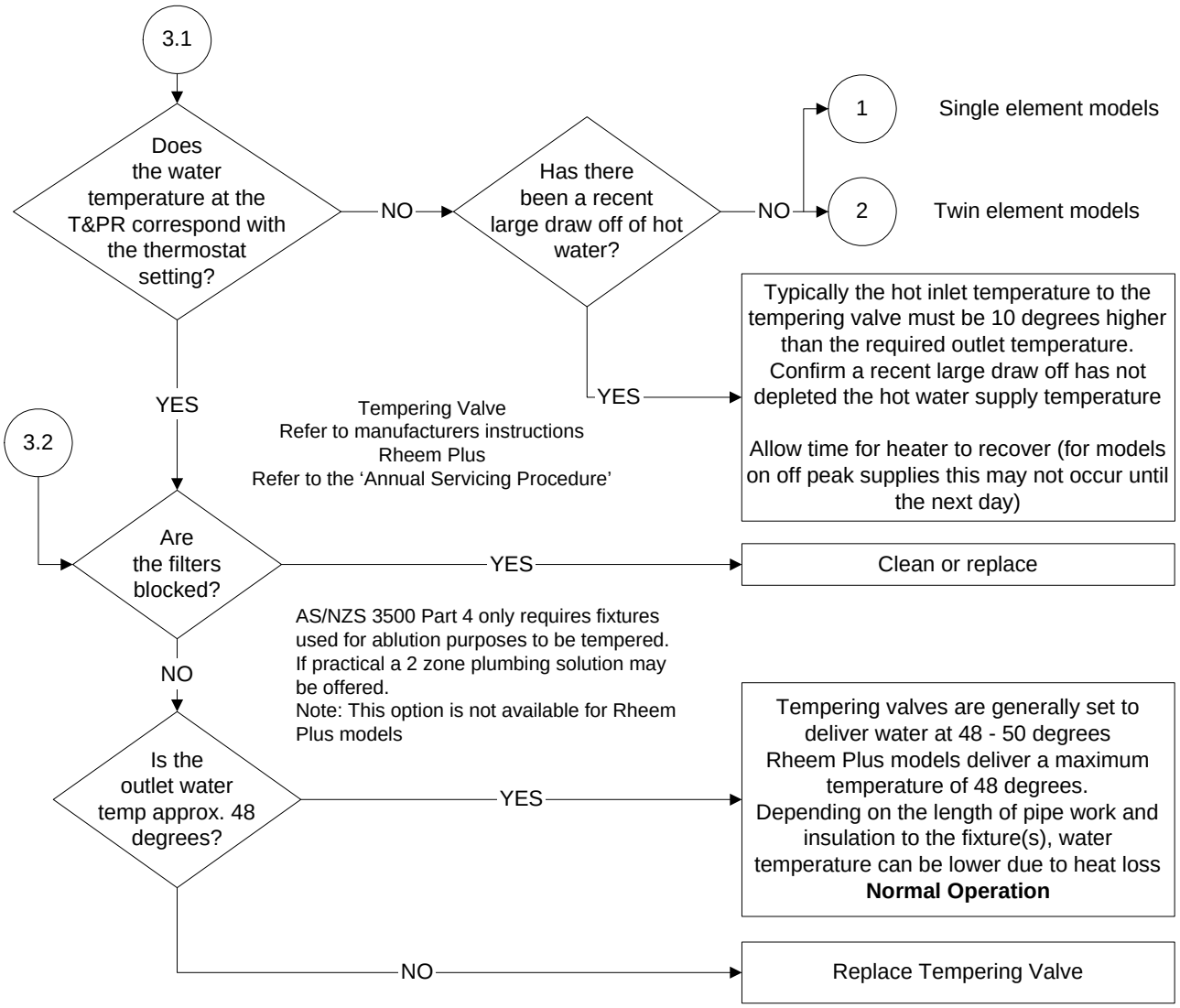
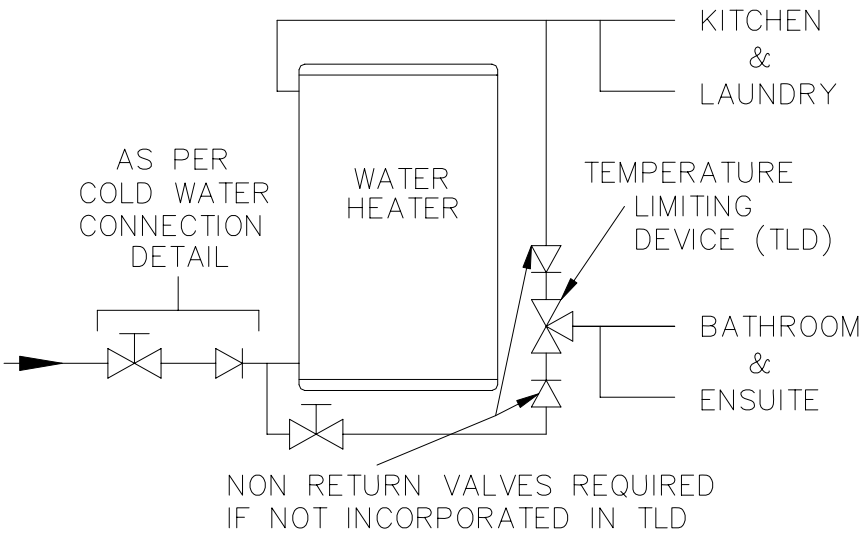
Fault Finding Chart 3.1 & 3.2


3.1
Does the water temperature at the T&PR correspond with the thermostat setting?
NO
Has there been a recent large draw off of hot water?
NO
1
Single element models
2
Twin element models
YES
YES
Typically the hot inlet temperature to the tempering valve must be 10 degrees higher than the required outlet temperature. Confirm a recent large draw off has not depleted the hot water supply temperature
Allow time for heater to recover (for models on off peak supplies this may not occur until the next day)
Tempering Valve
Refer to manufacturers instructions
Rheem Plus
Refer to the 'Annual Servicing Procedure'
3.2
Are the filters blocked?
YES
Clean or replace
AS/NZS 3500 Part 4 only requires fixtures used for ablution purposes to be tempered. If practical a 2 zone plumbing solution may be offered.
Note: This option is not available for Rheem Plus models
NO
Is the outlet water temp approx. 48 degrees?
YES
Tempering valves are generally set to deliver water at 48 - 50 degrees
Rheem Plus models deliver a maximum temperature of 48 degrees.
Depending on the length of pipe work and insulation to the fixture(s), water temperature can be lower due to heat loss
Normal Operation
NO
Replace Tempering Valve

2 Zone Plumbing Option


KITCHEN & LAUNDRY
AS PER COLD WATER CONNECTION DETAIL
WATER HEATER
TEMPERATURE LIMITING DEVICE (TLD)
BATHROOM & ENSUITE
NON RETURN VALVES REQUIRED IF NOT INCORPORATED IN TLD

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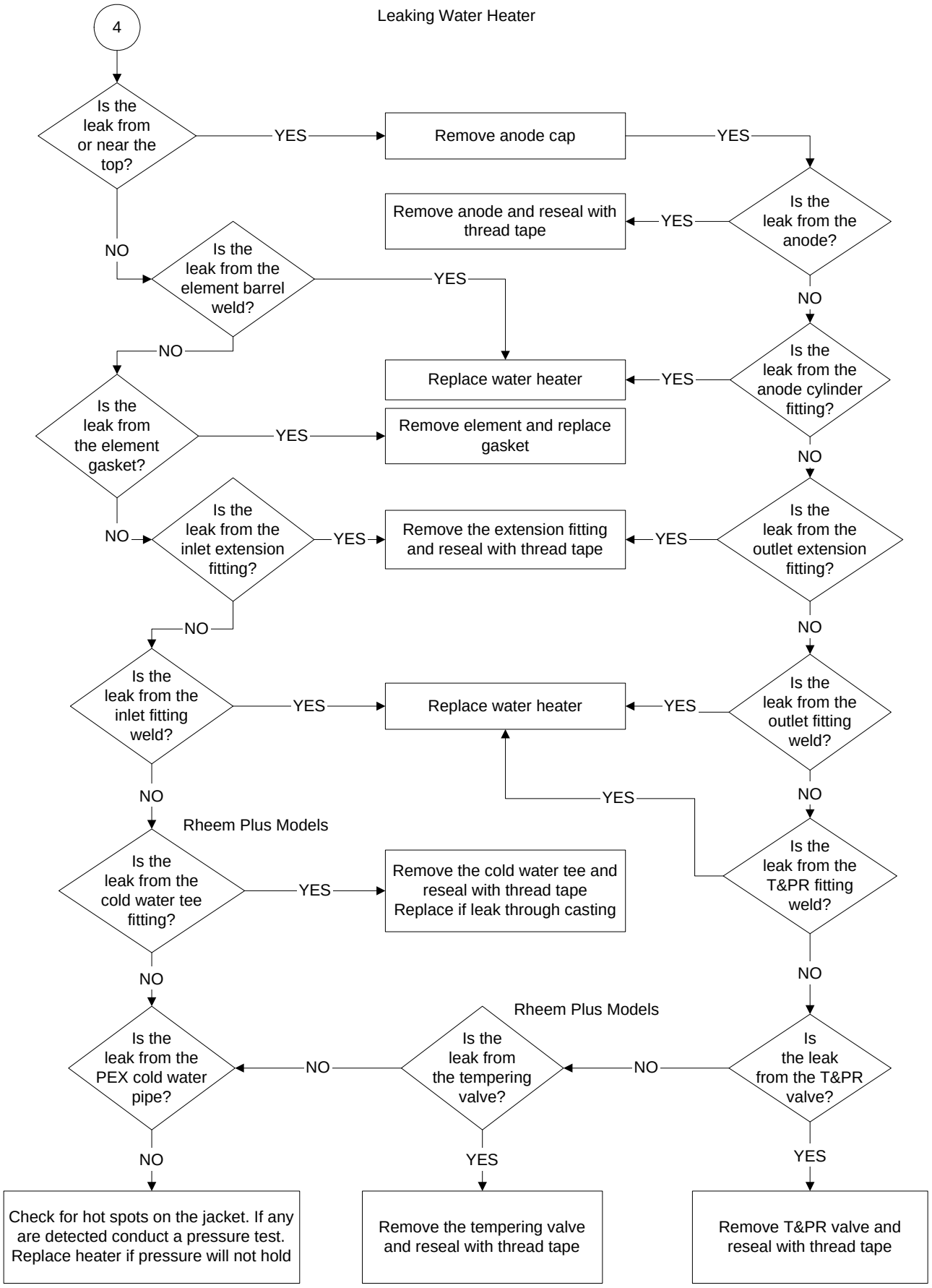
Fault Finding Chart 4


4
Leaking Water Heater
Is the leak from or near the top?
YES
Remove anode cap
YES
Is the leak from the anode?
YES
Remove anode and reseal with thread tape
NO
Is the leak from the element barrel weld?
YES
NO
Is the leak from the anode cylinder fitting?
YES
Replace water heater
Is the leak from the element gasket?
YES
Remove element and replace gasket
NO
Is the leak from the outlet extension fitting?
YES
Remove the extension fitting and reseal with thread tape
NO
Is the leak from the inlet extension fitting?
YES
NO
Is the leak from the outlet fitting weld?
YES
Replace water heater
Is the leak from the inlet fitting weld?
YES
NO
Rheem Plus Models
Is the leak from the T&PR fitting weld?
YES
Is the leak from the cold water tee fitting?
YES
Remove the cold water tee and reseal with thread tape Replace if leak through casting
NO
Rheem Plus Models
Is the leak from the PEX cold water pipe?
NO
Is the leak from the tempering valve?
NO
Is the leak from the T&PR valve?
NO
YES
YES
Check for hot spots on the jacket. If any are detected conduct a pressure test. Replace heater if pressure will not hold
Remove the tempering valve and reseal with thread tape
Remove T&PR valve and reseal with thread tape

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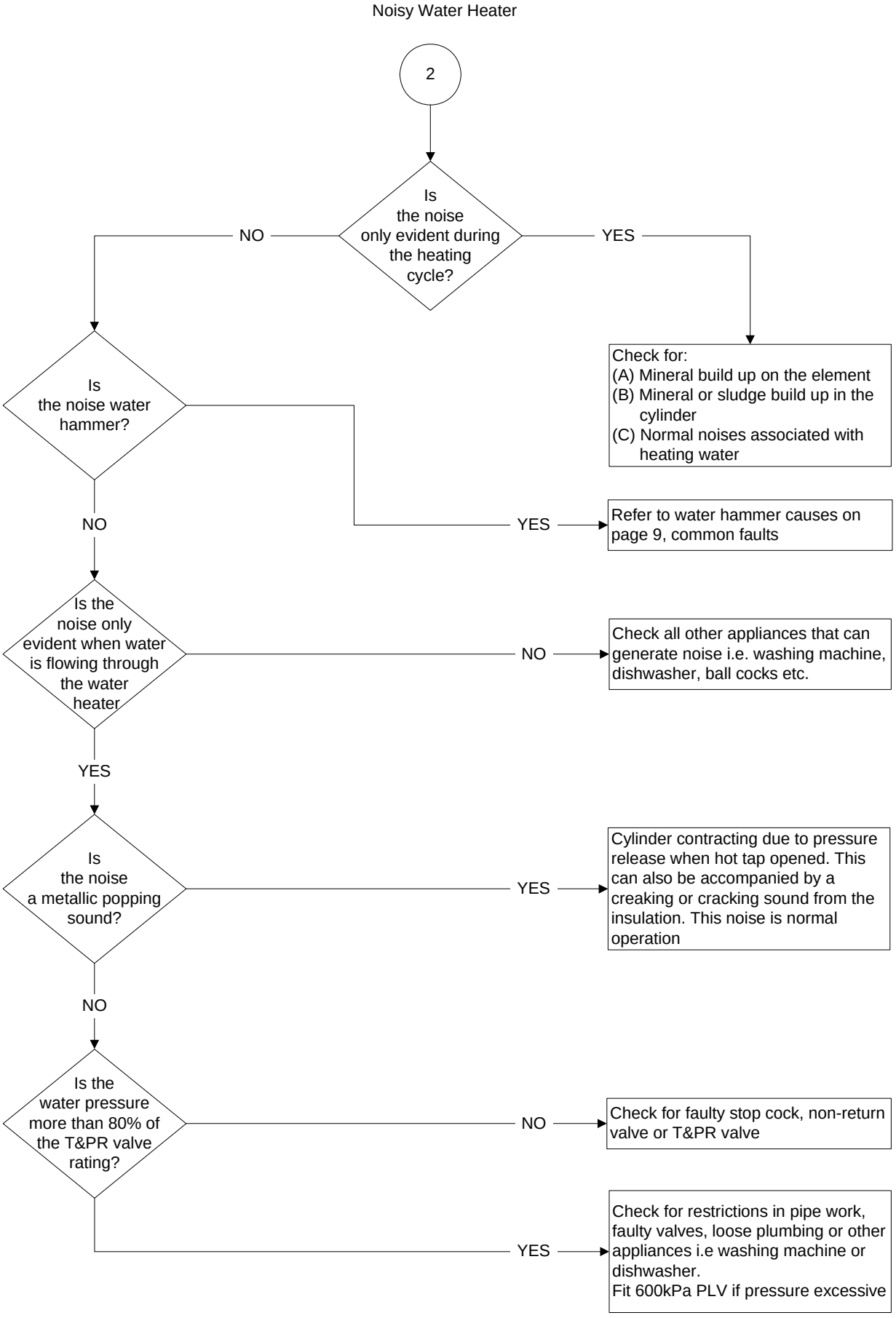
Fault Finding Chart 5


Noisy Water Heater
2
Is the noise only evident during the heating cycle?
NO
YES
Check for:
(A) Mineral build up on the element
(B) Mineral or sludge build up in the cylinder
(C) Normal noises associated with heating water
Is the noise water hammer?
YES
Refer to water hammer causes on page 9, common faults
NO
Is the noise only evident when water is flowing through the water heater
NO
Check all other appliances that can generate noise i.e. washing machine, dishwasher, ball cocks etc.
YES
Is the noise a metallic popping sound?
YES
Cylinder contracting due to pressure release when hot tap opened. This can also be accompanied by a creaking or cracking sound from the insulation. This noise is normal operation
NO
Is the water pressure more than 80% of the T&PR valve rating?
NO
Check for faulty stop cock, non-return valve or T&PR valve
YES
Check for restrictions in pipe work, faulty valves, loose plumbing or other appliances i.e washing machine or dishwasher.
Fit 600kPa PLV if pressure excessive

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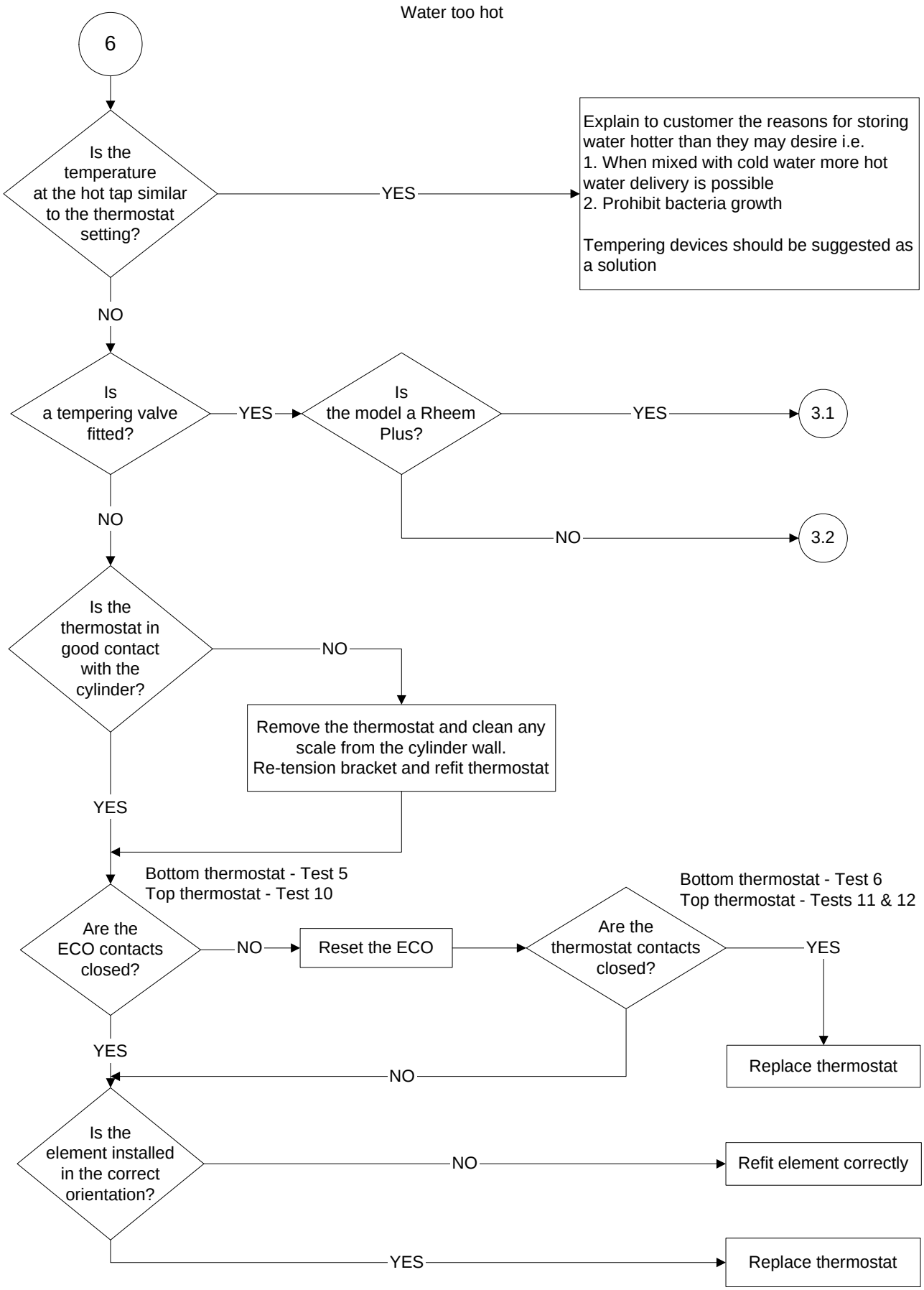
Fault Finding Chart 6


Water too hot
6
Is the temperature at the hot tap similar to the thermostat setting?
YES
Explain to customer the reasons for storing water hotter than they may desire i.e.
1. When mixed with cold water more hot water delivery is possible
2. Prohibit bacteria growth
Tempering devices should be suggested as a solution
NO
Is a tempering valve fitted?
YES
Is the model a Rheem Plus?
YES
3.1
NO
3.2
NO
Is the thermostat in good contact with the cylinder?
NO
Remove the thermostat and clean any scale from the cylinder wall.
Re-tension bracket and refit thermostat
YES
Bottom thermostat - Test 5
Top thermostat - Test 10
Are the ECO contacts closed?
NO
Reset the ECO
Bottom thermostat - Test 6
Top thermostat - Tests 11 & 12
Are the thermostat contacts closed?
YES
Replace thermostat
YES
NO
Is the element installed in the correct orientation?
NO
Refit element correctly
YES
Replace thermostat

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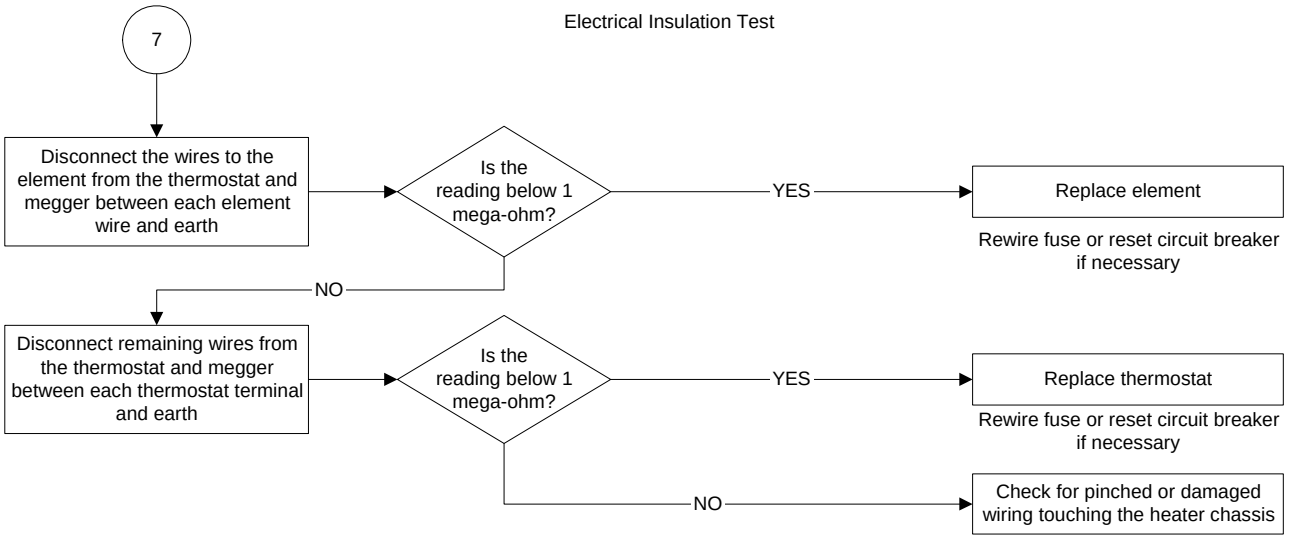
Fault Finding Chart 7


7
Electrical Insulation Test
Disconnect the wires to the element from the thermostat and megger between each element wire and earth
Is the reading below 1 mega-ohm?
YES
Replace element
Rewire fuse or reset circuit breaker if necessary
NO
Disconnect remaining wires from the thermostat and megger between each thermostat terminal and earth
Is the reading below 1 mega-ohm?
YES
Replace thermostat
Rewire fuse or reset circuit breaker if necessary
NO
Check for pinched or damaged wiring touching the heater chassis

Electrical Insulation Testing

There are three basic test procedures that should be carried out when the operation and function of a water heater's electrical system is in doubt.

Personal Protective Equipment should be worn when conducting step 1 of this procedure to reduce the risk of electric shock. Refer to Rheem safety procedure on electrical testing.

<u>Test 2</u> - To check insulation resistance of the water heater Neutral Circuit (reading not to be below 1 mega-ohm).

1. ***Isolate power to the water heater by removing fuse. Confirm with multi-meter across Active and Neutral at the terminal block that voltage is not present.***
2. Once satisfied, disconnect the active and neutral wires from the terminal block.
3. Connect megger leads to the neutral of the water heater wiring and earth.
4. Operate megger. A reading above 1 mega-ohm should be obtained.
5. If a reading below 1 mega-ohm is indicated, all component parts will need to be individually tested to locate the fault. Refer to flow diagram 7 above.

<u>Test 3</u> - To check insulation resistance of the water heater Active Circuit (reading not to be below 1 mega-ohm).

6. Connect megger leads to the active of the water heater wiring and earth.
7. Operate megger. A reading above 1 mega-ohm should be obtained.
8. If a reading below 1 mega-ohm is indicated, all component parts will need to be individually tested to locate the fault. Refer to flow diagram 7 above.

<u>Test 4</u> - To check "Continuity" of water heater electrical circuit.

9. Set megger to resistance scale or multimeter to x1 resistance scale.
10. If a reading greater than 50 ohms is indicated, all electrical component parts will need to be individually tested to locate the fault. Refer to test 8, page 15 for indicative resistances.
11. Reconnect the active conductor to the 'A' terminal and neutral conductor to 'N' terminal at heater terminal block.
12. Replace fuse. ***Note: If continuing with flow chart 1.1 or 2.1of diagnostic procedure do not replace fuse.***

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Draining the Water Heater (Procedure 1)

Elevated temperatures may be present during the draining process. Personal Protective Equipment should be worn to prevent the risk of scalding.

Personal Protective Equipment should be worn when conducting step 3 of this procedure to reduce the risk of electric shock. Refer to Rheem Safety Procedure on electrical testing.

1. ***Isolate the power and water supplies to the water heater*** and remove lower access cover***.***
2. ***Relieve pressure from the water heater through T & PR valve or a hot tap.***
3. ***Confirm with a multi-meter between each Active and Neutral at the terminal block that voltage is not present.***
4. Disconnect the cold water supply pipe.
5. Fit a drain hose to the cold water connection and run the other end to a drain or safe location.
6. Open the temperature and pressure relief valve to allow air into the system.

Temperature and Pressure Relief Valve (Procedure 2)

Never fit a T&PR valve with a rating higher than that indicated on the water heater rating plate. Do not use reconditioned T&PR valves.

1. ***Isolate the power and water supplies to the water heater.***
2. ***Relieve pressure from the the water heater through the T & PR valve or a hot tap.***
3. Remove the drain line from the T&PR valve.
4. Unscrew the T&PR valve and remove.

A quantity of hot water will discharge from the tank during this process. Personal Protective Equipment should be worn to prevent scalds or burns.

5. Confirm the replacement T&PR valve is the correct rating and refit using thread tape.
6. Refit the drain line.
7. Close the hot tap and restore water supply.
8. Check T&PR valve thread for leaks.
9. Operate the T&PR valve lever to reset relief drain.
10. Purge air from the system through hot taps.
11. Restore the power supply to the water heater.

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Dip Tube (Procedure 3)

1. ***Isolate the power and water supplies to the water heater.***
2. ***Relieve pressure from the water heater through the T & PR valve or a hot tap.***
3. Disconnect the hot water line from the outlet of the water heater.

A quantity of hot water will discharge from the outlet during this process. Personal Protective Equipment should be worn to prevent scalds or burns.

4. Remove the extension fitting (80L– 400L models).
5. Using a flat blade screwdriver gently split the outer rim at the top and bottom of the dip tube face and prise the dip tube out of the cylinder fitting.
6. Fit the replacement dip tube into the cylinder fitting ensuring the flat lines up with the fitting (dip tube facing up) and gently drive the dip tube into the fitting a short distance.
7. Apply thread tape to the extension fitting and refit; this will push the dip tube into the correct location.
8. Reconnect the plumbing and restore the water supply.
9. Purge air from the system through hot taps.
10. Restore the power supply.

Anode (Procedure 4)

Elevated temperatures may be present during anode removal process. Personal Protective Equipment should be worn to prevent the risk of scalding.

1. ***Isolate the power supply to the water heater.***
2. ***Isolate water supply to the water heater.***
3. ***Relieve pressure from the water heater through the T & PR valve or a hot tap.***
4. Remove the anode cap.
5. Using a 27mm tube or socket spanner remove the anode.
6. Apply thread seal tape to replacement anode, refit and tighten. **Note:** It may be necessary to cut the anode to length prior to fitting. Refer to page 4 for the correct anode length.
7. Restore water supply and check for leaks.
8. Refit the anode cap.
9. Purge air from the system through hot taps and restore the power supply to the water heater.

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Top Thermostat – Non-simultaneous (Procedure 5)

Personal Protective Equipment should be worn when conducting step 2 of this procedure to reduce the risk of electric shock. Refer to Rheem Safety Procedure on electrical testing.

1. ***Isolate electrical supply*** and remove upper and lower front covers.
2. ***Confirm with multi-meter between each Active and Neutral at the terminal block that voltage is not present.***
3. Remove the protective cover and disconnect wiring from the thermostat (Note wiring positions).
4. Slide thermostat vertically out of clamp.
5. Clean any corrosion from cylinder wall.
6. Slide replacement thermostat into place behind clamp and connect wiring to appropriate points. Refer to Wiring Diagram on page 7.
7. Check water heater internal wiring insulation for cracking.
8. Refit the thermostat protective cover and upper access cover securely.
9. Conduct an electrical insulation test. Refer to page 25.
10. Replace lower access cover and restore electrical supply.

Bottom Thermostat – Trade Adjustable (Procedure 6)

Personal Protective Equipment should be worn when conducting step 2 of this procedure to reduce the risk of electric shock. Refer to Rheem Safety Procedure on electrical testing.

1. ***Isolate the power to the water heater*** and remove access cover.
2. ***Confirm with multi-meter between each Active and Neutral at the terminal block that voltage is not present.***
3. Remove the thermostat protective cover and disconnect the wiring from the thermostat.
4. Slide the thermostat out from under the retaining clamp. Note the current temperature selected.
5. Remove any scale from the cylinder surface
6. Slide the replacement thermostat under the clamp and set temperature to that noted in step 4. Reconnect the wiring as per the circuit diagram on page 7.
7. Check water heater internal wiring insulation for cracking.
8. Conduct an electrical insulation test. Refer to page 25.
9. Refit the thermostat protective cover and the lower access cover.
10. Restore the power supply.

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Bottom Thermostat – Consumer Adjustable (Procedure 7)

1. Follow procedure 6 to step 5
2. Slide the replacement thermostat under the clamp.
3. Reconnect the wiring as per the circuit diagram on page 7 and refit the thermostat protective cover.
4. Conduct an electrical insulation test. (Refer to page 25)
5. Rotate the thermostat pointer to the middle position and fit the tee connector to the thermostat.
6. Gently disengage the knob from the access cover by compressing the 4 retaining fingers.

11. Replace lower access cover securely.
12. With the pointer of the knob indicating the middle temperature setting, gently refit the knob into the access cover ensuring the connector shaft engages into the knob and press until the 4 retaining fingers engage the access cover.
13. Select the temperature as noted in step 1 and restore electrical supply.

Cold Water Connector – Rheem Plus Models (Procedure 8)

Elevated temperatures may be present during the draining process. Personal Protective Equipment should be worn to prevent the risk of scalding.

1. ***Isolate power and water supplies to the water heater.***
2. ***Relieve pressure from water heater through the T & PR valve or a hot tap.***
3. Drain the water heater. Refer to procedure 1 on page 26.
4. Remove cold water and cold pipe access covers.
5. Disconnect plastic cold water pipe from cold water connector and unscrew cold water connector from heater.

   Note: Removal of the cold pipe requires the use of a special tool, part number 890330. To remove the cold pipe from the cold water connector slide the tool over the pipe and push down against the quick connect fitting whilst pulling up on the cold pipe.
6. Screw new cold water connector into cylinder using thread tape on threaded section.
7. Insert plastic cold pipe into cold water connector snap lock fitting and push down clicking plastic cold pipe into fitting (no tool required).
8. Reconnect cold water supply pipe.
9. Restore water supply and check for leaks.
10. Purge air from the system through hot taps.
11. Refit cold water and cold pipe access covers.
12. When tank is full restore electrical supply.

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Tempering Valve – Rheem Plus Models (Procedure 9)

A quantity of hot water will discharge from the tank during this process. Personal Protective Equipment should be worn to prevent scalds or burns.

1. ***Isolate the electricity and water supplies to the water heater.***
2. ***Relieve pressure from the water heater through the T&PR valve or a hot tap.***
3. Drain the water heater. Refer to procedure 1 on page 26.
4. Remove the tempering valve and cold pipe access covers.
5. Disconnect cold and warm water pipes from tempering valve and unscrew tempering valve from heater.

   Note: Removal of the cold pipe requires the use of a special tool, part number 890330. To remove the cold pipe from the tempering valve slide the tool over the pipe and push up against the quick connect fitting whilst pulling down on the cold pipe.
6. Screw new tempering valve into heater using thread tape on threaded section.
7. Insert cold pipe into tempering valve quick connect fitting and push up to click pipe into place (no tool required).
8. Reconnect warm water pipe using thread tape on threaded section.
9. Close hot tap or T&PR valve and restore water supply.
10. Check for leaks.
11. Purge air from the system through hot taps.
12. When tank is full restore electrical supply.

After replacing the tempering valve the warm water temperature will need to be checked to ensure correct operation. Refer to steps 11 to 13 in the Rheem Plus Tempering Valve Annual Service Procedure on page 32.

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Element – Top and Bottom (Procedure 10)

Elevated temperatures may be present during element removal process. Personal Protective Equipment should be worn to prevent the risk of scalding.

Personal Protective Equipment should be worn when conducting step 2 of this procedure to reduce the risk of electric shock. Refer to Rheem Safety Procedure on electrical testing.

When replacing an element on a heater with a cylinder barrel that does not have an earth tab (refer to page 8) ensure that the metal surround of the element flange is in direct contact with the cylinder barrel flange thus ensuring a good Earthing contact and conduct an earth continuity test as required by AS/NZS 3000 6.3.3.2.

When a fault or leak is traced to the element, the water heater should be drained to prevent damage to flooring or floor coverings by accidental flooding.

1. ***Isolate power and water supplies*** and remove the lower access cover***.***
2. ***Confirm with a multi-meter between each Active and Neutral at the terminal block that voltage is not present.***
3. ***Relieve pressure from water heater through the T & PR valve or a hot tap.***
4. Drain the water heater. Refer to procedure 1 on page 26.
5. When the water heater is drained, undo the four element screws, removing thermostat clamp first.
6. Withdraw heating unit. Care must be taken to ensure the loop of the heating unit does not catch in the cylinder opening and open out inside the cylinder.

   NOTE: Do not "cut off" the heating unit and leave a portion inside the cylinder
7. Clean around cylinder fitting, fit gasket to new element and slide heating unit into cylinder (reverse to step 6) taking care that it is in the correct orientation. See heating unit plate for directions.
8. Replace screws and thermostat clamp and tighten.
9. *Models manufactured after 7/11/05 without an element flange Earth tab*.

   The earthing of the internal storage cylinder relies on a good electrical contact between the metal surround of the element flange and the cylinder barrel flange.

   An earth continuity test should be performed whenever an element or element gasket is replaced, adjusted or serviced in any way. This continuity test is performed between the heaters internal storage cylinder and the main earth terminal of the water heater with a resulting reading of not more than 0.5 ohms as required by AS/NZ 3000 6.3.3.2.
10. Restore cold water supply and fill the storage tank by gently lifting the easing lever on the T & PR valve until water runs from the drain.
11. Check for water leaks around the element flange.
12. Conduct an electrical insulation test. (Refer to page 25)
13. Replace access cover securely and restore electrical supply.

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A quantity of hot water will discharge from the tank during this process. Personal Protective Equipment should be worn to prevent scalds or burns.

1. Remove the tempering valve. Follow steps 1 to 5 in Procedure 9 on page 30.
2. Dismantle and clean or replace hot water inlet filter. The “C” clip and filter can be removed by gently prising out with a small flat bladed screwdriver. When clean reassemble by inserting filter then the “C” clip.
3. Dismantle and clean or replace cold water inlet filter and non-return valve. Unscrew quick connect fitting and gently prise out filter and then non-return valve (a “C” clip is not fitted). Reassemble in reverse order ensuring that the “O” ring for the quick connect fitting is in place. No thread tape is required on the snap lock fitting thread.
4. Screw tempering valve back into heater using thread tape on threaded section.
5. Insert cold pipe into tempering valve quick connect fitting and push up to click pipe into place (no tool required).
6. Reconnect warm water pipe using thread tape on threaded section.
7. Close hot tap or T&PR valve and restore water supply.
8. Check for leaks.
9. Purge air from the system through hot taps.
10. When tank is full restore electricity.

    After servicing the tempering valve the warm water temperature will need to be checked to ensure correct operation.
11. Ensure heater is at operating temperature (60 - 75°C). This can be checked at the T&PR valve.
12. Check temperature at the **NEAREST** warm water tap. A reading of 48°C +/- 1.5°C should be obtained. If the reading is outside these parameters the tempering valve should be replaced (see Procedure 17 on page 30).

    Ensure Temperature at the warm water outlet nearest the water heater does not exceed 50 Deg C as required by AS3500.4 clause 1.9.2.
13. Refit all covers.

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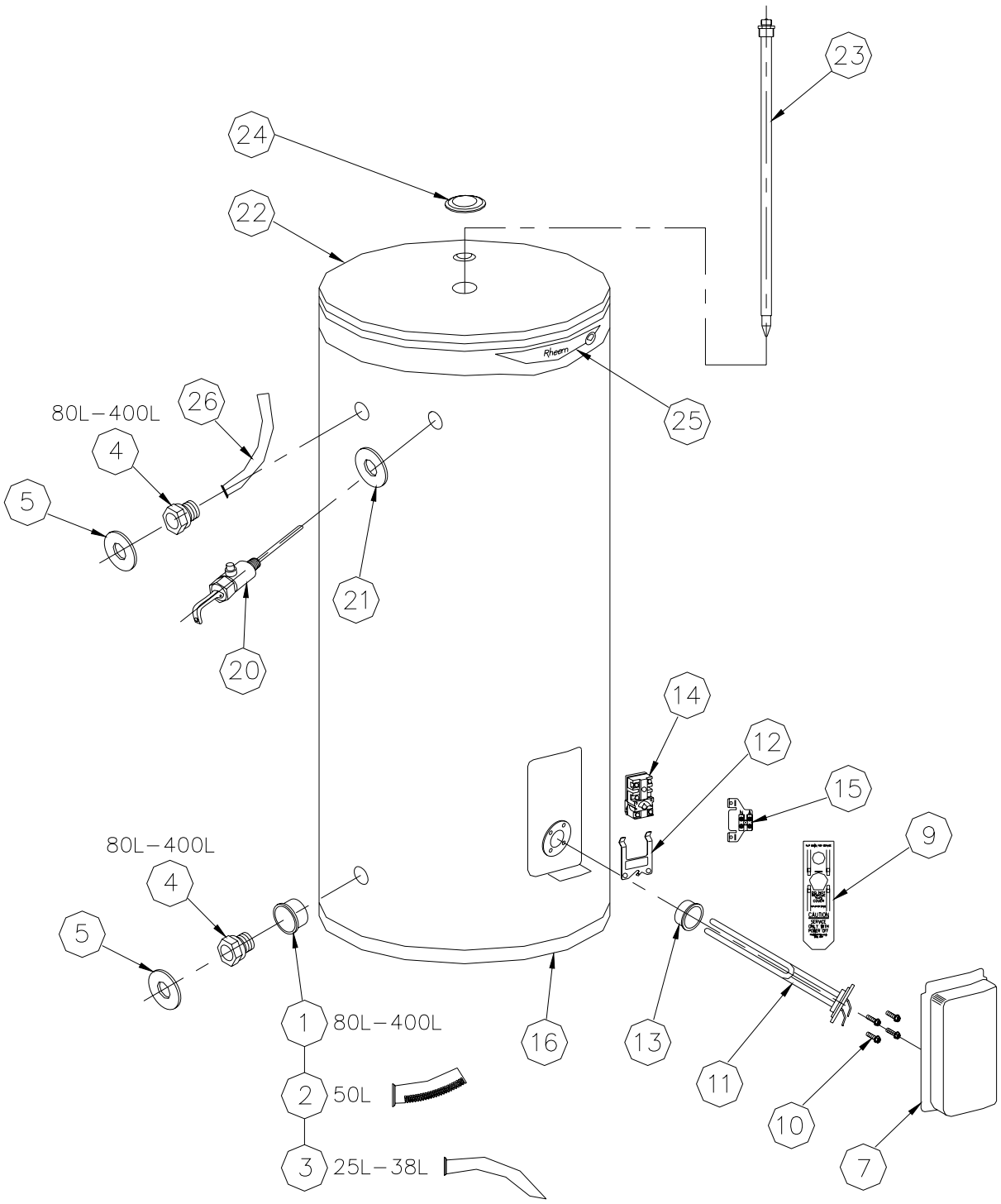
Exploded View – Single Element Models



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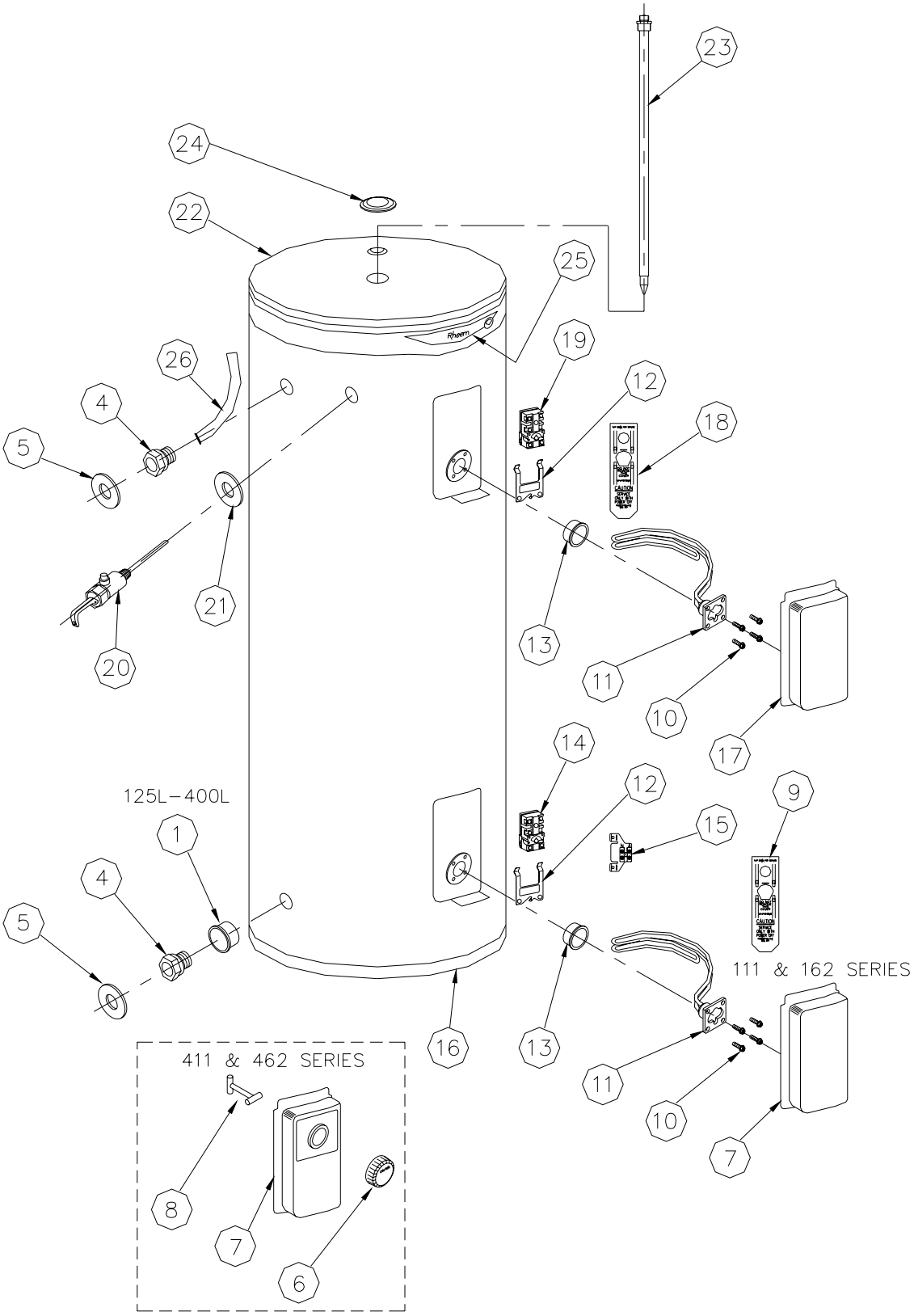
Exploded View – Twin Element Models



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Replacement Parts List - 25L and 50L

Item	Description	111025	111050 171050 191050	191G50	111050F 171050F
2	Inlet Diffuser	Not fitted	220516	220516	225304
3	Dip Tube (Inlet)	225303	Not fitted	Not fitted	Not fitted
4	Extension Fitting	Not fitted	Not fitted	069405	Not fitted
5	Pipe Seal – Inlet/Outlet	221398-1	221391-1	221409	221392-1
7	Access Cover	100703-1	100780	100783	100784
9	Thermostat Cover	226921	226921	226921	226921
10	Element Screw	051404	051404	051404	051404
11	Element (Copper) - 1.2kW	N/A	050215	050215	050215
	Element (Incoloy)* - 1.2kW	050250	050250	050250	050250
	Element (Copper) - 1.8kW	N/A	050213	050213	050213
	Element (Incoloy)* - 1.8kW	050251	050251	050251	050251
	Element (Copper) - 2.4kW	N/A	050212	050212	050212
	Element (Incoloy)* - 2.4kW	050252	050252	050252	050252
	Element (Copper) - 3.0kW	N/A	050211	050211	050211
	Element (Incoloy) - 3.0kW	050253	050253	050253	050253
	Element (Copper) - 3.6kW	N/A	050210	050210	050210
	Element (Incoloy)* - 3.6kW	050254	050254	050254	050254
	Element (Copper) - 4.8kW	N/A	050209	050209	050209
	Element (Incoloy)* - 4.8kW	050255	050255	050255	050255
12	Thermostat Clamp	102501	102501	102501	102501
13	Element Gasket	050704	050704	050704	050704
14	Thermostat	051336	051313	051313	051313
15	Terminal Block	051521	051521	051521	051521
16	Jacket Bottom	100537-1	100453-1	100526-1	100457
20	T&PR Valve -1400kPa	220610	220610	220644	220610
NI	Insulation T&PR Valve	Not fitted	Not fitted	Not fitted	090150
21	Pipe Seal – T&PR	221284-1	221297-1	221411	221314
22	Jacket Top	100625-1	100624-1	100622-1	100624-1
23	Anode – Black	221916	221908	221908	221903
	Anode – Blue	221928	221928	221928	221943
	Anode – Green	222016	222012	222012	222013
24	Anode Cover	221720-1	221720-1	221720-1	221720-1
25	Name Band – LH Connections	120499	120432	N/A	120443
	Name Band – RH Connections	N/A	120433	N/A	120443
	Name Band – Dual Connections	N/A	120443	120443	N/A
26	Dip Tube (Outlet)	2256002	225601	225601	225601
N.I	Cord Set – 10 amp	890244	890244	890244	890244
	Install kit	N/A	290133	290138	290132

NI – Not illustrated

*Mandatory on 25 litre models only

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Replacement Parts List - 80L, 125L and 160L

Item	Description	80L	125L	160L
1	Fitting Liner	221001	221001	221001
4	Extension Fitting	069405	069405	069405
5	Pipe Seal – Inlet/Outlet (Pre April 03)	221404-1	221404-1	221404-1
	Pipe Seal – Inlet/Outlet (After April 03)	221409	221409	221409
7	Access Cover (Bottom – 111 series)	100703-1	100780	100780
	Access Cover (Bottom – Rheem Plus)	N/A	100783	100783
	Access Cover (Bottom – 162 series)	N/A	100781	100781
9	Thermostat Cover – Bottom	226921	226921	226921
10	Element Screw	051404	051404	051404
11	Element (Copper) - 1.2kW	050215	050215	050215
	Element (Copper) - 1.8kW	050213	050213	050213
	Element (Copper) - 2.4kW	050212	050212	050212
	Element (Copper -3.0kW	050211	050211	050211
	Element (Copper) - 3.6kW	050210	050210	050210
	Element (Copper) - 4.8kW	050209	050209	050209
	Element (Copper) - 6.0kW	050208	050208	050208
12	Thermostat Clamp	102501	102501	102501
13	Element Gasket	050704	050704	050704
14	Bottom Thermostat	051350	051350	051350
15	Terminal Block (Single Element)	051521	051521	051521
	Terminal Block (Twin Element)	N/A	051507	051507
16	Jacket Bottom (Pre April 03)	100643-1	100643-1	100643-1
	Jacket Bottom (After April 03)	100600	100600	100600
17	Access Cover (Top – Twin Element)	N/A	100782	100782
18	Thermostat Cover – Top	N/A	226921	226921
19	Top Thermostat	N/A	051315	051315
20	T & PR Valve - 1400kPa	220644	220644	220644
	T & PR Valve - 1400kPa (Rheem Plus)	N/A	220610	220610
21	Pipe Seal – T & PR (Pre April 03)	221408-1	221408-1	221408-1
	Pipe Seal – T & PR (After April 03)	221411	221411	221411
22	Jacket Top (Pre April 03)	100648-1	100648-1	100648-1
	Jacket Top (After April 03)	100651	100651	100651
23	Anode – Black	221913	221914	221915
	Anode – Blue	221943	221924	221925
	Anode – Green	222013	222014	222015
24	Anode Cover	221720-1	221720-1	221720-1
25	Name Band – LH Connections	120421	120421	120421
	Name Band – RH Connections	120422	120422	N/A
	Name Band – Rheem Plus	N/A	120441	120441
26	Dip Tube (Outlet)	225601	225601	225601
N.I	Cord Set – 10 amp	890244	N/A	N/A

N.I – Not illustrated

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Replacement Parts List - 250L, 315L and 400L

Item	Description	250L	315L	400L
1	Fitting Liner	221001	221001	221001
2	Inlet Diffuser (After January 2004)	Not fitted	Not fitted	220516
4	Extension Fitting	069405	069405	069405
5	Pipe Seal – Inlet/Outlet	221404-1	221404-1	221404-1
6	Temp Adjustment Knob (411 & 462 series)	226928-1	226928-1	226928-1
7	Access Cover (Bottom – 111 series)	100703-1	100703-1	100703-1
	Access Cover (Bottom – 162 series)	100779	100779	100779
	Access Cover (Bottom – Rheem Plus)	100783	100783	N/A
	Access Cover (Bottom – 411 series)	100777	100777	100777
	Access Cover (Bottom – 462 series)	100778	100778	100778
8	Tee Connector (411 and 462 series)	226941	226941	226941
9	Thermostat Cover – Bottom (Trade Adj)	226921	226921	226921
	Thermostat Cover – Bottom (Consumer Adj)	226931	226931	226931
10	Element Screw	051404	051404	051404
11	Element (Copper) - 1.2kW	050215	050215	050215
	Element (Copper) - 1.8kW	050213	050213	050213
	Element (Copper) - 2.4kW	050212	050212	050212
	Element (Copper) - 3.0kW	050211	050211	050211
	Element (Copper) - 3.6kW	050210	050210	050210
	Element (Copper) - 4.8kW	050209	050209	050209
	Element (Copper) - 6.0kW	050208	050208	050208
12	Thermostat Clamp	102501	102501	102501
13	Element Gasket	050704	050704	050704
14	Thermostat Bottom (111 & 162 series)	051350	051350	051350
	Thermostat Bottom (411 & 462 series)	051354	051354	051354
15	Terminal Block (Single Element)	051521	051521	051522
	Terminal Block (Twin Element)	051507	051507	051507
16	Jacket Bottom	100642-1	100642-1	100641-1
17	Access Cover (Top – Twin Element)	100704-1	100704-1	100704-1
18	Thermostat Cover – Top (Twin Element)	226921	226921	226921
19	Top Thermostat	051315	051315	051315
20	T & PR Valve (H.T.E 1000kPa)	220641	220641	220641
21	Pipe Seal – T & PR	221408-1	221408-1	221408-1
22	Jacket Top (111 & 162 series)	100647-1	100647-1	100646-1
	Jacket Top (411 & 462 series)	100647-3	100647-3	100646-3
23	Anode – Black (111 & 162 series)	221914	221915	221938
	Anode – Black (411 & 462 series)	222022	222021	222020
	Anode – Blue (111 & 162 series)	221924	221925	221947
	Anode – Blue (411 & 462 series)	222032	222031	222030
	Anode – Green (111 & 162 series)	222014	222015	222015
	Anode – Green (411 & 462 series)	222036	222035	222034
24	Anode Cover	221720-1	221720-1	221720-1
25	Name Band (111 & 162 series)	120497	120497	120497
	Name Band (Rheem Plus)	120442	120442	N/A
	Name Band (411 & 462 series)	120496	120496	120496
26	Dip Tube (Outlet)	225601	225601	225601

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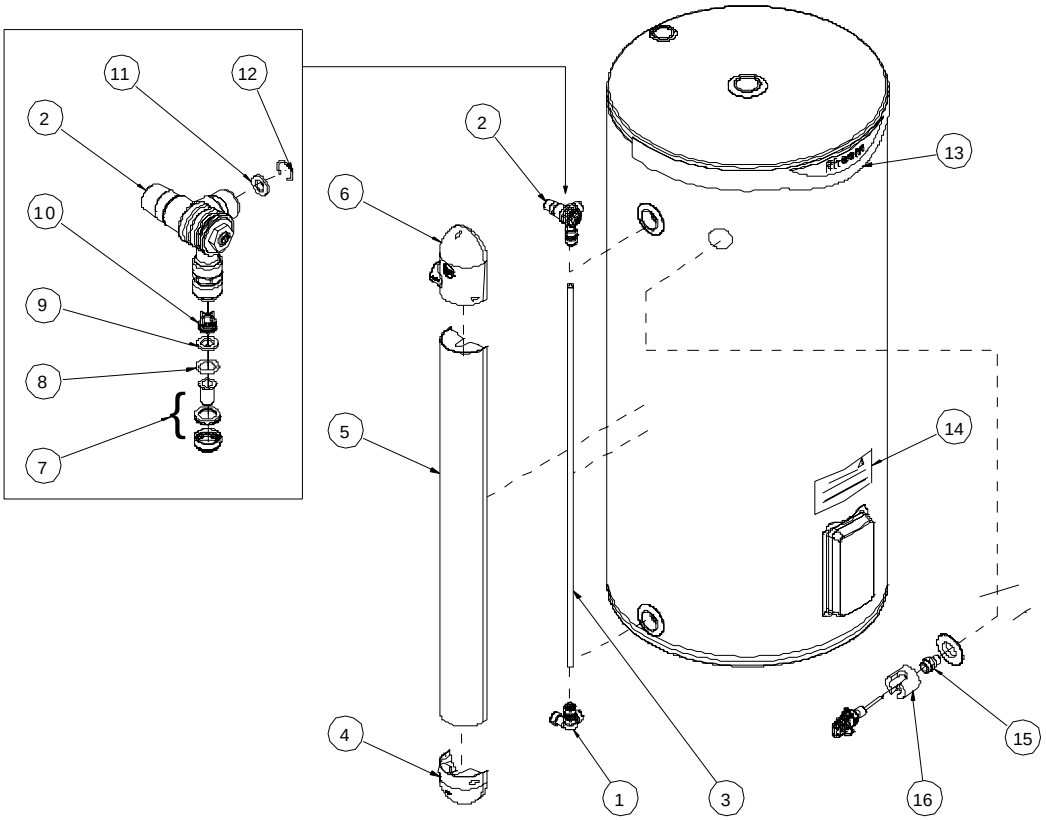
Exploded View – Rheem Plus Components



Replacement Parts List

Item	Description	125	160	250	315
1	Cold Connector	220602	220602	220602	220602
2	Tempering Valve 50ºC	220601	220601	220601	220601
3	Plastic Cold Pipe	220553	220557	220554	220556
4	Duct Lower Cover & Insulation	103680	103680	103680	103680
5	Duct & Insulation	103672	103673	103674	103675
6	Duct Top Cover & Insulation	103682	103682	103678	103678
7	Quick Connect Fitting. Comes with item 2	N/A	N/A	N/A	N/A
8	Quick Connect O-ring	890357	890357	890357	890357
9	Cold Water Filter	890354	890354	890354	890354
10	Non-return Valve	890356	890356	890356	890356
11	Hot Water Filter	890354	890354	890354	890354
12	“C” Clip	890355	890355	890355	890355
13	Name Band	120441	120441	120442	120442
14	Label Tempering Valve Service	121231	121231	121231	121231
15	Extension fitting	088042	088042	N/F	N/F
16	Insulation – T&PR Valve	090150	090150	N/F	N/F
	Cold Pipe Removal Tool (not shown)	890330			

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Rheem Electric Water Heater Warranty - (Australia Only)

WARRANTY CONDITIONS

1. This warranty is applicable only to Rheem water heaters manufactured from 1st January 2001.
2. The water heater must be installed in accordance with the Rheem water heater installation instructions, supplied with the water heater, and in accordance with all relevant statutory and local requirements of the State in which the water heater is to be installed.
3. Where a failed component or water heater is replaced under Warranty, the balance of the original period will remain effective. The replaced part or water heater does not carry a new warranty.
4. Where the water heater is installed outside the boundaries of a metropolitan area as defined by Rheem or further than 25 km from a regional Rheem Water Heaters Australia branch office, or an Accredited Service Agent, the cost of transport, insurance and travelling costs between the nearest Rheem Water Heaters Australia Accredited Service Agent's premises and the installed site shall be the owner's responsibility.
5. The warranty only applies to the water heater and original or genuine company component replacement parts and therefore does not cover any plumbing or electrical parts supplied by the installer and not an integral part of the water heater, e.g. pressure limiting valve; isolation valves; non-return valves; electrical switches; pumps or fuse.
6. The water heater must be sized to supply the hot water demand in accordance with the guidelines in Rheem water heater literature.

WARRANTY EXCLUSIONS

1. REPAIR AND REPLACEMENT WORK WILL BE CARRIED OUT AS SET OUT IN THE RHEEM WATER HEATER WARRANTY ABOVE, BUT THE FOLLOWING EXCLUSIONS MAY CAUSE THE WATER HEATER WARRANTY TO BECOME VOID, AND MAY INCUR A SERVICE CHARGE AND COST OF PARTS.

a) Accidental damage to the water heater or component including: Acts of God; failure due to misuse; incorrect installation; attempts to repair the water heater other than by a Rheem Accredited Service Agent or the Rheem Water Heaters Australia Service Department.

b) Where it is found there is nothing wrong with the water heater; where the complaint is related to excessive discharge from the temperature and pressure relief valve due to high water pressure; where there is no flow of hot water due to faulty plumbing; where water leaks are related to plumbing and not the water heater components; where there is a failure of gas, electricity or water supplies; where the supply of gas, electricity or water does not comply with relevant codes or acts.

c) Where the water heater or water heater component has failed directly or indirectly as a result of: excessive water pressure, temperature and/or thermal input or corrosive atmosphere.

d) Where the water heater is located in a position that does not comply with the Rheem water heater installation instructions or relevant statutory requirements, causing the need for major dismantling or removal of cupboards, doors or walls, or use of special equipment to bring the water heater to floor level.

e) Repairs to the water heater due to scale formation in the waterways when the water heater has been connected to a harmful water supply as outlined in the Owner's Guide and Installation Instructions booklet.

2. SUBJECT TO ANY STATUTORY PROVISIONS TO THE CONTRARY, THIS WARRANTY EXCLUDES ANY AND ALL CLAIMS FOR DAMAGE TO FURNITURE, WALLS, FOUNDATIONS OR ANY OTHER CONSEQUENTIAL LOSS EITHER DIRECTLY OR INDIRECTLY DUE TO LEAKAGE FROM THE WATER HEATER.

In addition to this warranty, the Trade Practices Act 1974 and similar laws in each state and territory provide the owner under certain circumstances with certain minimum statutory rights in relation to your Rheem water heater. This warranty must be read subject to that legislation and nothing in this warranty has the effect of excluding or restricting those rights.

RHEEM WATER HEATERS AUSTRALIA
RHEEM AUSTRALIA PTY. LTD.
A.B.N 21 098 823 511

FOR SERVICE TELEPHONE
131 031 AUSTRALIA
or refer local Yellow Pages

NOTE: Every care has been taken to ensure accuracy in preparation of this publication. No liability can be accepted for any consequences, which may arise as a result of its application.

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Document Revision History

Title: Service Instructions - Rheem Electric Water Heaters		Document Number: TM012
Revision	**Details of change**	**D.O.I.**
A	Service Instructions issued for Rheem Electric Models	11/02
B	Format revised, Dual handed and Rheem Plus models added	03/06

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